PROGRAMMING - HISTORY - INTERVIEWS - REVIEWS - INSIGHTS

Future days are back

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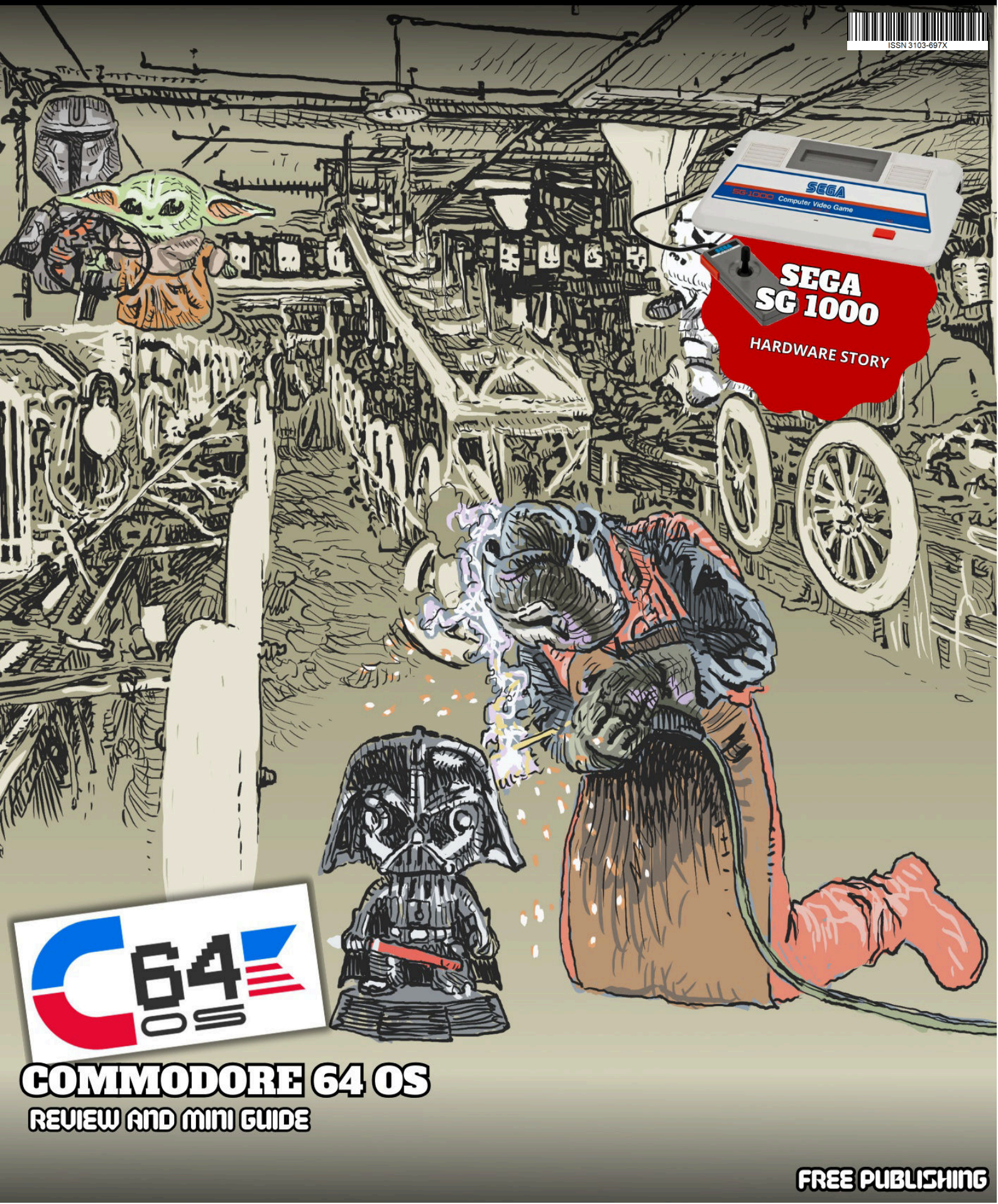

COMMODORE 64 OS

REVIEW AND MINI GUIDE

FREE PUBLISHING

They used to call it "Retrogaming"

The world of video games is a strange one indeed. Despite periodically releasing works that take perfect advantage of the latest technological progress, it seems that gamers can never break away from their "Linus blanket" which is our old and beloved retro systems.

We see it clearly, the world of retrogaming in recent years has experienced exponential growth with specific fairs, dedicated pages, sites, e-commerce and magazines (we at RMW are part of this, of course).

Although the games of the past years appear as faded if compared to the many new features of today, as soon as we hear the name of an old title, let's admit it, our eyes sparkle.

Monkey Island 2, Super Mario Bros, Uridium, Elite, Stunt Car Race, Doom... our emotions travel fast to the past and it mathats us feel... so good!

But what is it about retrogaming that gamers find so appealing that makes this phenomenon so growing? It's definitely not the graphical aspect or a deep story. What is?

These are emotions and nostalgia. Positive and negative emotions that emerge when we think of a certain event related to our past. As soon as we start an old title... Baaaam!!! nghere they appear. And we don't care if the look of some old games for Vectrex or Atari 2600 is not 4k and with cinematic narrative scenes. It is the recovery of our emotional feelings that matters.

But that's not all there is to it. We can no longer call it retrogaming, or at least not only.

I was looking at the list of titles coming out for 8- and 16-bit consoles from July 2023 to the first quarter of 2024, and it is astounding.

There are 148 tat least itles in development. Some are advanced (via demo or alpha release) some are kickstarter or patreon versions, and some are a simple group of images.

Not to mention the hundreds of titles coming for 8- and 16-bit computers.

There is life in nostalgia and memories. A new life that continues in the same spirit.

Does it still make sense to call it retro? I like to think that it was just stop and grow and that the old consoles and computers were just resting and waiting for better times--and they have come!

In short, whether it is nostalgia for the past or the desire to play something new on old systems, retrogaming is a phenomenon whose popularity is not likely to diminish, in fact I am sure it will increase.

Even among younger people, who did not get to experience those wonderful years firsthand, they are getting more and more curious about the old titles, and you know what? They feel the same feelings as those who are now adults.

Carlo Nithaiah Del Mar Pirazzini

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Nintendo WII - the (un)protections - part 2

by Dr. Andrea Q. - www.retrofixer.it

Youtube: https://www.youtube.com/channel/UCEw0CQ8LKyA9jVvWXkEwp4Q

WII CHAIN OF TRUST

The reliability chain requires that the maneuvers necessary to "turn on" the Wii hardware and operating system be "secure"; that boot process begins with boot0, a portion of code that resides inside a chip called Hollywood and that CANNOT be written, only read. Boot0 loads boot1, which is located at the beginning of the Wii NAND blocks; boot1 then loads boot2, which is located in a portion of NAND independent of the file system. Finally, boot2 loads the System Menu IOS, which loads the first System Menu file representing the Wii desktop GUI we are all accustomed to:

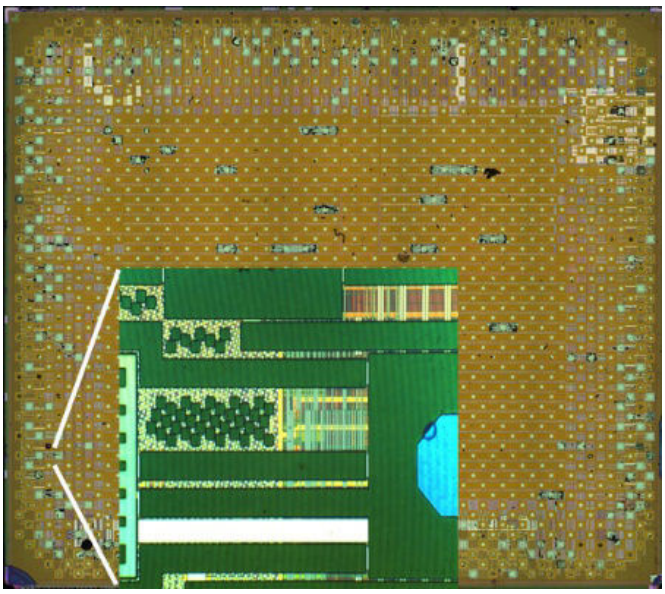
Let's look at this chain in detail:

BOOT 0

- Where it is located: inside the Starlet chip (apparently called "Viper" by Nintendo programmers) in a 4Kb Macronix "Mask ROM" which in turn is contained in the Hollywood chip; the Starlet is located inside the "Vegas" chip (the square one in the photo below-the little arrow indicates the SEEPROM, see below for its explanation):

The rectangular chip, on the other hand, is the NAPA, which contains 24 MB of high-speed memory (243MHz, MoSys 1T SRAM).

The VEGAS chip decapped by the then flylogic (current



IOActive) looks like this:

The boot0 code was dumped directly from memory using a modified boot2, with a function written in C (by the coder called tmbinc...sometimes they come back), which precisely dumps the memory, in which, at the time boot2 is executed, boot0 is still present and therefore readable and copyable.

- Size: 1,300 bytes (1.3 Kb - of 4 Kb total available in the Mask ROM)

- Main functions: contains the code to read the first 48 pages of the NAND, decrypts them with a fixed AES key, generates hashes using the SHA1 algorithm and compares these hashes with a value read from the OTP memory (a 1Kb memory, programmable only once, that resides inside the Hollywood - actually it is not a real memory but are factory programmed eFuses with a proprietary NEC technology called EF1K_TOP): if the value does not match the console does not start. If the hashes value in the OTP is all 0000 the system starts anyway but this value seems to be present only in developer consoles and possibly during the production process.

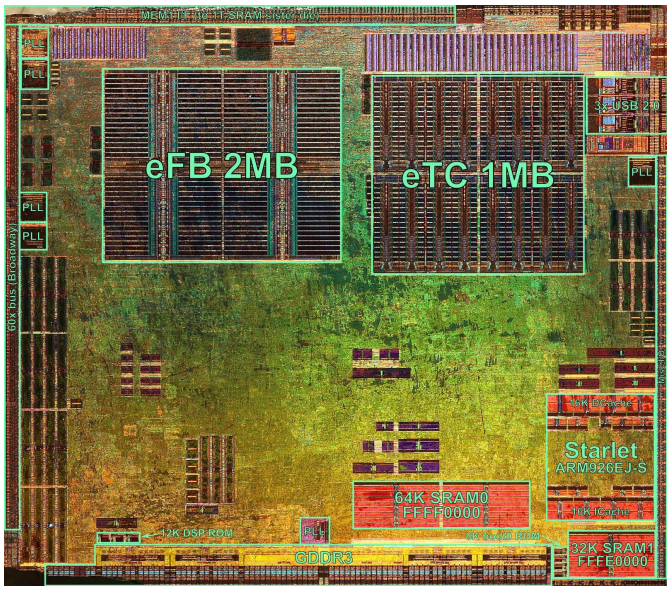
In essence then boot0 has relationships with:

- OTP storage area (from which it "fishes" the boot1 hashes and then compares them with boot1 itself-written in production, it resides in the Hollywood chip);
- NAND controller (to read encrypted boot1)
- AES engine (to decrypt boot1)
- SRAM (where the decrypted boot1 is copied)

- SHA engine (to authenticate boot1)
- Versions: there appear to be 2, identifiable according to whether you have a HOLLYWOOD or HOLLYWOOD AA branded chip:

bushing suspects an additional version of the chip, the HOLLYWOOD A but this revision of the Hollywood chip was never found within the explored consoles.

Here is a deccaping of VEGAS by Marcan (January 2016):



CRIPTED DATA AND KEYs.

PROGRAMS

All Wii programs (Channels, Games, WiiWares, system titles) are named "titles"; each title has:
- its own unique TitleID that identifies it;
- a Title MetaData (TMD) file that signs and describes the contents of the title installation package (inside it contains the SHA-1 hashes of the content, permissions data, group ID, and region locking information);
- an eTicket representing the specific license (which may also be console-specific) required to use the title; contains the encrypted AES key used to decrypt the title data during installation - this key is decrypted with the Common Key; may contain a "time expiration" for running the installed title.

Both TMD and eTicket are signed with a Nintendo proprietary RSA-2048 key.

DISK GAMES

The data stored on the proprietary DVDs are divided into partitions (update and game) and are encrypted with an AESkeyalong with a key in the eTicket; each block is also "hashed" through SHA-1 and there is a hash tree that reports to a "master hash" for proper verification of the content; the signature resides in the TMD file while the encryption key.
Thus, the Wii contains several keys that we can divide into 2 categories:

KEYs AES

AES KEYs use the AES-128-CBC algorithm, are used to "hide" data and are contained within the console and some are shared between consoles.

The most famous are:
- Common Key: shared key, dumped through the Twiizer Attack (see below), is used to encrypt the AES key of installed titles; such encrypted data is saved in a ticket file. It is stored in the OTP.
- SD Key: shared key, is used by the System Menu to encrypt any data written to the SD, savegames included. It is also stored in the OTP.
- NAND Key: different for each console, it is used to encrypt the contents of the NAND; it is most likely generated during the console building process. It is also saved in the OTP.

KEYs RSA

RSA KEYs, on the other hand, are different from AES keys because they use asymmetric encryption and therefore do not have "shared secrets" so they cannot be extracted from the Wii because it does not contain them; the only thing the Wii contains are public keys, used to verify the authenticity of data encrypted with this algorithm. The main ones are:
- CP (Content Protection?): used to firmware .tmd files. Its bypass was made possible by the discovery of the Trucha Bug (see below).
- XS (Access?): sign tickets containing the keys of each title
- CA: sign both XS key and CP key
- MS (Master?): signs the Wii's ECC public key certificate; this certificate is then attached to the game saves in the SD.
- Root: sign the CA key

SINGLE GAME PROTECTIONS

Some games have an execution problem that often results in an error that mentions a phantom "metafortress" or simply freezes, usually at the beginning of the execution of a video. These games are protected by protection called METAFORTRESS produced by the software house Metaforic (acquired by inside security in 2014). In practice this protection is able to understand if the original code has been modified thus giving problems that often occur DURING the execution of the game (which in most cases starts but then always crashes in the exact same places).

To avoid this problem the important thing is to NOT APPLY any changes to the game inside the Backup Loader which means to leave the default options of the game itself (language, region, fix, video and whatnot - some you can read in the cover of the game itself); also YOU MUST NOT ENABLE CHEATS in the loader otherwise this also leads the protection to perceive changes.

Games that feature this type of protection are:
- Arthur and the Revenge of Maltazard - NTSC
- Driver: San Francisco - all regions
- Hollywood Squares - PAL
- Kirby - all regions
- My Fitness Coach: Club (A.K.A. Fit in Six).
- Racket Sports Party
- The Amazing Race - PAL
- We Dare - PAL
- Smurfs Dance Party - all regions
- Tin Tin - all regions?
- Tony Hawk: Shred
- U-Sing 2
- Your Shape
- Prince of Persia - The Forgotten Sands

Some titles (UbiSoft in particular, such as TinTin or Prince of Persia) have additional protection that figures out if there is a loader in memory that has started the game and, if it finds it, at the time of checking, blocks it; this is a big limitation because this additional protection is protected by Metafortress making it definitely difficult to overcome (each patch of the additional protection is seen as a modification by metafortress which then blocks the game); for now the safe method to boot these backups is to have a Wii with a player that supports DVD-backups or systems like Wode that turn an external device into a Wii drive: this way in fact the additional protection will not sense a loader because the game is started from the official disk channel.

This kind of protection is definitely advanced and allows each individual game to be uniquely protected in such a way that, once its operation is understood, it applies only and exclusively to the game in question but cannot be applied to others making its overcoming poorly predictable and therefore definitely time-consuming for those who try to get around it (the coder Crediar for example succeeded with Kirby but the crack used consisted of a disproportionate number of patches to disable it; he probably did it as a proof-of-concept and I don't think it was repeated on the other games).

To summarize, games with only metafortress can be started by disabling all modifications/patches (cheats, region, etc.); games that find the loader in memory instead (typical UbiSoft protection that has nothing to do with metafortress) can be started with modifications to the loader so that the protected game no longer recognizes it; games that have both protections instead are tough because if you patch the game to bypass the protection, metafortress is activated. This protection (Metafortress) is also used in some DS games. I thank coder DAVEBAOL (author of cIOS d2x, see below) for explanations on this.

DEVELOPMENT UNIT

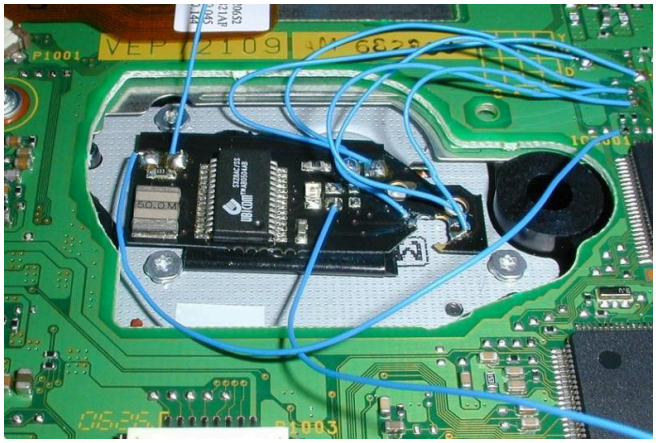
There are not many pictures or information about this developer unit called RVH-T; in all likelihood it offered debugging capabilities and probably was not capable of booting retail games.

SYSTEMS TO EXECUTE ARBITRARY CODE:
HARDMOD

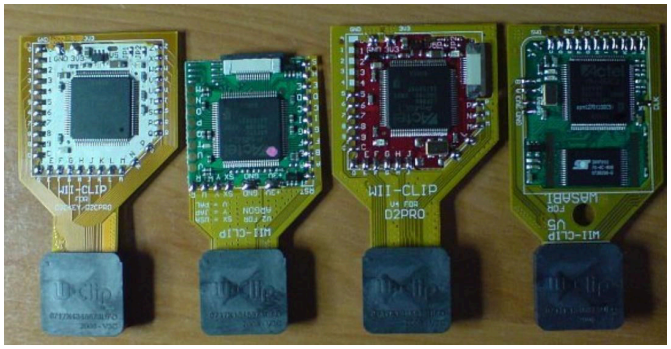
The first modifications to the console were hardware and were represented by the very famous "modchips" and that is, chips that were interposed between the optical drive and its connection with the console.

There existed/existed an almost disproportionate amount of them and there were 2 major categories: those that

required manual soldering (pictured: CycloWiz):



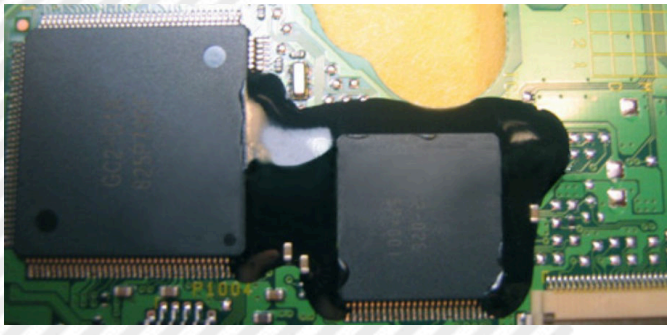
and the newer "solderless" ones, which would snap on with clips at key points, usually above the optical drive chip (pictured: D2cKey, Argon, D2Pro and Wasabi):



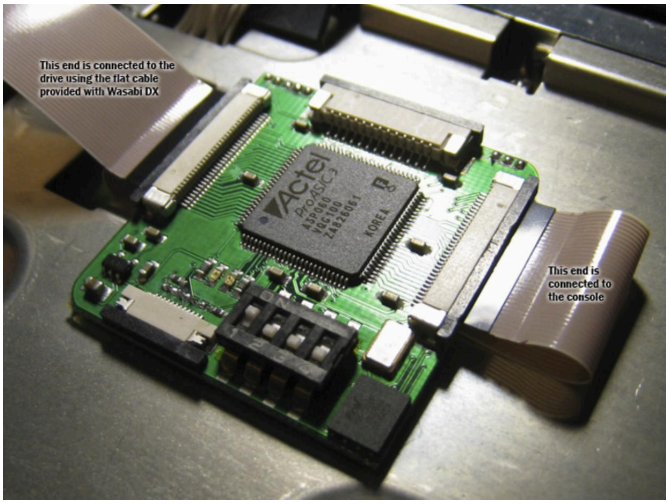
The biggest issue with these chips was compatibility; in fact, some games required about 6x speed to run properly while these chips provided at most 3x speed.

In addition, the release of System Menu 3.0 was able to cause a small number of modded consoles to brick.

Obviously the cat-to-mouse run-up required updating the chips every time Nintendo modified its optical drive hardware, that is until the release of the version called "D2E" (see above for the complete list); until this revision in fact the modchips could work even though big N tried to hide the pins under an epoxy resin that could still be removed though at the risk of damaging the hardware:



Tough was the life of modchips with the advent of the revision called "D3" of the optical drive: from this point on, the controller chip was no longer on the PCB; this forced modchip developers to devise a stratagem to insert their chip between the console and the optical drive via the latter's flat cable and using the player's DVD mode, a mode not available "officially" so that the console could not read regular DVDs (pictured: Wasabi DX):



Nintendo's next move was simple and brilliant: to remove support for normal DVDs directly from the firmware of the optical drive and did so with the revision called "D3-2" ! The latter and later are the players referred to as "anti-modification" players.

The "hacker" countermove was then to replace the PCB of the optical drive with that of a D3 or older player; to obviate even this stratagem Nintendo's last hardware move was finally to totally redesign the player PCB with the version called "D4," which was smaller than its predecessor and had different connections that made "swapping" PCBs impossible.

The last resource for playing backups came with optical drive "replacements," peripherals that could emulate the real drive and thus load games directly from USB or SD, such as the WODE Jukebox (Wii Optical Drive Emulator), which you can see in the photo:

In addition, a system to add an external USB DVD drive is possible with Hermes'

cIOS and loader called uLoader; however, this homebrew does not allow the original discs to be read due to the proprietary format, backups must therefore be burned to the DVD in .ISO format.

In the spoiler below you can see an image taken from wikipedia where all modchips and their compatibilities with optical drives are listed:

Name	Availability	DMS/D2A Compatible	D2B Compatible	D2C Compatible	D2C2 Compatible	D2E Compatible	D3 Compatible	D3-2 / D4 Compatible	Notes
Argon/InFeCtuS	Yes	Yes	Yes	Yes	Yes	Yes	No	No	InFeCtuS chips are universal, can be flashed for other consoles.
Argon2	Yes	Yes	Yes	Yes	Yes	Yes	No	No	
Chilp	Yes	Yes	Yes	No	No	No	No	No	
CycloWiz	No	Yes	No	No	No	No	No	No	
FlatMii	Yes	Yes	Yes	Yes	Yes	Yes	Yes	USB only	Fix for New Super Mario Bros. Wii is proprietary, and only supported by the FlatMii team.
FlatMod	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Fix for New Super Mario Bros. Wii is proprietary, and only supported by the FlatMii team.
D2Suns	Yes	Yes	Yes	Yes	Yes	Yes	No	No	
SunKey	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	
SunDriver	Yes	Yes	Yes	Yes	Yes	Yes	Yes	IDE/CompactFlash or SATA interface	Completely replaces the Wii's disc drive.
OpenWii	No	Yes	Yes	No	No	No	No	No	
Wasabi DX	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Can act as a Wasabi Zero after a firmware update and reinstallation.
Wasabi V1	No	Yes	Yes	Yes	No	No	No	No	
Wasabi V2	No	Yes	Yes	Yes	Yes	Needs an update	No	No	
Wasabi V3	No	Yes	Yes	Yes	Yes	Yes	No	No	
Wasabi Zero	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Identical to the Wasabi V3, but includes a JTAG port and the ability to go solderless.
Wi-Ic	No	Yes	Yes	No	No	No	No	No	Error 001, which is in games as old as Super Smash Bros. Brawl, is not automatically patched.
Wii-Boss	No	Yes	Yes	No	No	No	No	No	
WiiD	No	Yes	Yes	No	No	No	No	No	
WiiFree	No	Yes	Yes	No	No	No	No	No	Open-source drivechip.
WiiUli	No	Yes	Yes	No	No	No	No	No	
WiiKey	Yes	Yes	Yes	No	No	No	No	No	"Quick solder" method will not work on D2B Wiis with a missing pad or cut legs. The latest firmware fixed "Error 001", but brought back issues with GameCube audio streaming.
D2CKey	No	No	No	Yes	No	No	No	No	
D2Pro	Yes	Yes	Yes	Yes	Yes	Yes	No	No	
D2Lite	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Loading burned discs requires a special firmware. Units with a yellow sticker can be flashed with WiiKey 2 firmware.[9]
WiiKey 2	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Appearance is identical to D2Lite. Early chips even had a white PCB.
DriveKey	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	
WiiKey Fusion	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Via SD card	Appearance is identical to DriveKey.
Wiinja	No	Yes	Yes	No	No	No	No	No	
Wiip	No	Yes	Yes	No	No	No	No	No	
Wiip2	No	Yes	Yes	No	No	No	No	No	
WiiRez	No	Yes	Yes	No	No	No	No	No	
WODE Jukebox	Yes	Yes	Yes	Yes	Yes	Yes	Yes	With a USB hard drive	
YAOSM	No	Yes	Yes	No	No	No	No	No	Open-source drivechip.
Yowii	No	Yes	Yes	No	No	No	No	No	Open-source drivechip.
SureFire	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Based on Flatmii, no external support needed, but only runs if wii menu is 4.0 or under (will not work on wii menu 3.3)

The final blow in defense of its software was finally lashed out by the Kyoto-based company by beginning to use in its titles control over BCA data (see above) until then a procedure never carried out by the game itself such as in the New Super Mario Bros Wii title; the game had to be patched to be started with modchips.

SAVEMII / SAVEMIIFRII

Hardware created by Team Twiizers after discovering, through debugging, the existence of the Wii's Recovery Menu; through this hardware that mode was triggered. It was later discovered that this "secret" menu could also be initiated in a second way: by plugging a GC controller into the fourth port on the console and pressing the D-Pad repeatedly in all directions (Savemiifiii). It was useful in the case of bricks from having installed titles from different regions (it only worked for semi-bricks, that is, bricks that did not depend on IOS and/or the System Menu but only on installed titles).

A flow chart on Wii hardware troubleshooting written by Team Twiizers can be viewed here: http://savemii.net/troubleshooting.html.

BOOTDISCS

FREELOADER

FREE LOADER
GAMECUBE
PLAY GAMECUBE GAMES FROM ANY COUNTRY ON YOUR GAMECUBE CONSOLE!
Works with Wii
FOR USE ON EUROPEAN CONSOLE
Instruction Manual for
IMPORTANT - PLEASE READ!

The first (and perhaps the only?) boot disk produced by the now-famous (for modifications) Datel was Freeloader which allowed bypassing of regional restrictions (both Wii and GC mode). One would insert the disk, boot it from the dashboard, and replace it with the game disk. A very small amount of Wii games were not compatible while compatibility was further reduced if they were GameCube games. It was compatible with modchips.

It does NOT allow booting backups ! It no longer works since fw version 3.4.

Also for this issue we have come to an end, see you next issue for part 3.

WARNING: Disclaimer

The information contained in this article is for informational purposes only. This documentation is not guaranteed to be error-free. If this information is used to modify your hardware, it is your responsibility to take all necessary emergency, backup, redundancy, and other measures to ensure its safe use. RetroMagazine World disclaims all liability for any damages caused by the use of the information in this article.

Emulate. What, how, and why??

by Marco Pistorio

I take advantage of this vacation season, in this sunny month of August here in Sicily (but not only here), to start talking to you about this topic that surely interests so many of us, including me of course. :)
I have been using VICE to emulate my beloved "breadbin" C64 for a long time, so I already know the advantages and disadvantages that this choice entails.
For example, among the advantages I count versatility, the ability to run games (and/or software in general) made for the C64 on newly developed hardware, from the home PC to the Raspberry PI, via the much praised (by some) and the much criticized (by others) TheC64 by Retro Games Ltd, including in the route even Android-based devices, thus many cell phones.
Want to talk about disadvantages? The emulation is not 100% perfect and therefore, compared to operation on the original hardware, sometimes you will experience different response times, various inaccuracies (both in graphics and audio sections) and, in the worst cases, the emulated game does not start at all or crashes the emulator!

Always keep in mind these "cornerstones," these elements that are always true when it comes to emulation.

I recently discovered devices that literally "hypnotized" me. For example, in order of time, I found on the market a console called "Powkiddy RGB20S," a retro portable video game console with thousands of games available, built-in 3.5-inch color LCD screen with 640x480 resolution, based on ArkOs (Linux), RK3326 processor with four ARM cores at 1.5 Gz, 1 Gb of RAM, equipped with a convenient Emulation Station frontend thanks to which games can be easily launched, two built-in analog mini-sticks, a cross controller, seven front buttons and as many as four rear triggers, Wi-fi support (via adapter sold separately) and finally two SD Card slots, one dedicated to the operating system, the other intended to hold games.
The device immediately impressed me and I, consequently, purchased it immediately!
The advantage of this console? It's portable - you have everything you need to play games in a device that weighs about 240 grams, measures 12x8.3x3 cm, and is convenient to carry around with you.
Of course, there are also drawbacks. For simple games, which do not require excessively high resolution or graphics acceleration, everything is fine. Otherwise, however, the troubles, crashes and incompatibilities begin.
To be clear, if you want to emulate cookie-cutter games, or old MAME titles for example, they almost always go smoothly. On the other hand, if you intend to emulate PS2 or Nintendo64 titles for example, look for something else :)

Powkiddy RGB20S (source: AMAZON)

Some time later, I came across another device, the "Super Console X Cube" (which I also purchased), which is a console to be connected to the home TV as it has 4K HD/AV TV output, is equipped with two wireless gamepads, again Linux-based on-board operating system, Emulation Station frontend, Amlogic S905X processor i.e. a quadcore ARM Cortex A53 at 1.5 Ghz, full Ethernet/Wi-Fi support. The device provides its own internal software (operating system, frontend, game cores, emulators etc.) and includes an SD card containing games that can be launched.
There are different "sizes" of such SDs, which arrive already full, with capacities ranging from 64 Gb up to 256 Gb.
This device does not differ much from its predecessor in terms of hardware performance.
Again, if we restrict ourselves to titles that ran on 8bit, 16bit, and 32bit platforms, we proceed smoothly.

The trouble starts with the more advanced platform games. The inconveniences I have personally experienced range from dilated times when running the game to distorted audio to titles not starting. Unfortunately, these are ever-present drawbacks when it comes to emulation. Always! Again, despite the higher resolution offered on the TV, and despite the game controllers that I have found to be excellent personally, I do not recommend this device for emulating titles from recent and/or more powerful platforms (e.g. Nintendo64, PS2, Xbox etc.)

Super Console X Cube (source: AMAZON)

The big step forward of these systems, which I was able to verify personally because I bought them, is the presence of many emulators that are already present in these devices, ready and configured to play immediately a lot of titles, more or less retro. Think that in the SD you often already find the roms i.e. the games already loaded, with cover and with a short video that illustrates the gameplay of each game,as well as some quick info about the game, the year of release, the country, the distributing software house etc. Don't ask me how they did it for copyrights...their business :)

If you don't have too many demands, and want to play some old titles right away and quickly, they both go excellently.

It's all already configured and ready to use...I repeat, though, if you don't demand too much, if you don't intend to play games that require particularly complex graphics, if you don't choose console titles that are too recent.

For emulating newer console titles, on the other hand, I have been very comfortable with...the PC, installing the BATOCERA operating system.

The PC in fact combines many of the advantages already expressed in the previous solutions I have tried.

Thanks to the PC's video card, it is often possible to connect the PC to the TV at home, particularly if DVI output is present.

In addition, the PC has a cooling system that avoids some of the 'inconveniences' that can be encountered with other solutions, including those I have already mentioned, of course.

Finally, even for the PC, one can equip oneself with appropriate wireless game controllers.

And if the video card has hardware acceleration and supports Direct3D 11.1/OpenGL 4.4/Vulkan, even the latest gaming platforms become within our reach.

Batocera offers a user-friendly, simple and effective user interface. If you have the "right" titles, fun, even together with your friends, is assured!

The purpose of this article is to tell you about my personal experience in the world of retrogaming.

Obviously, I do not want to sell anything to anyone, but I hope that my guidance and my path may be useful to those who, perhaps, are struggling and have little information to decide whether and what to buy.

Resignation. The "perfect" solution does not exist.

It takes patience, a lot of patience. And it doesn't always, despite the purchase of a device i.e., a console or a "well-rounded" video card, go smoothly.

The market really offers a lot. You just need to choose well! Look closely at the specifications of what you buy, think about the use you will put it to and what games you will try to play.

A link for those who would like to learn more about BATOCERA:

https://batocera.org/

Happy retrogaming to all in this scorching summer 2023!!!

WARNING

It is common for the sale of some of these solutions to be accompanied by varying numbers of ROMs that unfortunately do not comply with official licenses; we as RMW deprecate unofficially licensed solutions.

PlayCable - Mattel Intellivision

by Francesco Fiorentini

Leonardo Miliani had already mentioned it in his article devoted to the **Mattel Intellivision** in **issue 15-IT or 27-EN** (if you haven't read it yet, go catch up), but the topic is definitely intriguing and I thought it deserved a closer look.

For those who have no idea what we are talking about, PlayCable was a service designed by Mattel and General Instruments in 1980 that allowed operators of cable television systems, to send games for the Intellivision along with regular television signals. This service, officially launched in 1981, remained active only until 1983.

How it worked - user side

The main component of the PlayCable was an adapter (see Fig. 1) that plugged into the cartridge port of the Intellivision. The adapter consisted of several components, including a cable signal receiver, a Radio Frequency signal demodulator, a 16K DRAM module, and the PlayCable ASIC that was the actual heart of the system.

Once the PlayCable cartridge was inserted, when the system was turned on, the Intellivision would connect to the cable service provider and receive data about the menu containing the games that could be downloaded, divided into screens of 4 games at a time.

The menu consisted of about 15 games (it would become

Fig. 1 - PlayCable adapter

20 in October 1982) that were chosen from a larger pool of titles and rotated at the beginning of each month.

Once the game to be downloaded was selected, the adapter would tune the receiver to the channel broadcasting the chosen title and wait for the game data stream to begin. The received data would be transferred to RAM and at the end of the transfer the game would run automatically.

Depending on the size of the game, the download could take 10 to 20 seconds.

Try putting yourself in the shoes of an American boy in the 1980s who had the ability to play almost the entire playground of his console with only a $12 per month charge... Pure science fiction!

How it worked - provider side

The service was delivered by a PDP-11 computer equipped with customized data channel cards. These broadcast channels, similar to FM radio stations, contained one or more programs and were transmitted within the cable signal. The special feature of the boards was that they could operate independently through their own RAM and CPU for and could transmit data over two channels.

The system was built in such a way that each provider

Fig. 2 - The computer PDP-11

could send its own data stream and thus customize the offering.

Compatibility

A game, to be compatible with the PlayCable service, had to be 8K or less in size, use a standard memory map of $5000 to $6FFF, and run without the aid of modifications (e.g., Intellivoice).

Of the 61 games for Intellivision released by Mattel, only 13 are incompatible with the PlayCable, and yet, these will be at the root of the service's failure...

Incompatible games:

B-17 Bomber - 12k/Intellivoice
Bomb Squad - 12k/Intellivoice
Space Spartans - Intellivoice
USCF Chess - RAM at $D000
Bump 'n' Jump - 16k
Masters of the Universe: The Power of He-Man - 16K
Melody Blaster - 12K
Mind Strike - 12K
Mr. Basic Meets Bits 'N Bytes - 12K
Pinball - 12K
The Jetsons' Ways With Words - 12K
Tron: Solar Sailer - 12k/Intellivoice
Vectron - 12k
World Series Major League Baseball - 24K/Intellivoice

The reasons for failure

At first glance, it seems like a fantastic system, every teenager's dream; to be able to play a large number of games at an all-too-cheap cost...

So why was the service terminated, after only 2 years, in 1983? The adapter did not have enough memory to hold the more modern and consequently more sought-after games, which required 12K or 16K of memory.

Providers preferred to allocate cable channels to television programs, with a much larger catchment area, rather than to the expensive and limited PlayCable service.

Dulcis in fundo, the PlayCable service turned out to be a potential development system for Intellivision, and this obviously did not please Mattel management, which perceived it as a potential competitive threat.

For these reasons, the service was discontinued in 1983, leaving many children with a bitter taste in their mouths for what they were losing.

That's too bad, because the PlayCable system was definitely state-of-the-art so much so that, only in recent years have we realized how much it really was.

Useful links for further study:

- https://en.wikipedia.org/wiki/PlayCable
- http://www.intvfunhouse.com/hardware/playcable/

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Fig. 3 - An advertisement from the time of the PlayCable service

Sega SG-1000

by Leonardo Miliani

What we are going to analyze in this article is a third-generation game console, introduced on the same day as the Nintendo Famicom (later evolved into the NES) at the 1983 Tokyo Toy Show. It is Sega's SG-1000, little known in the West because it was never officially marketed outside Japan. However, the SG-1000 is important because it marked Sega's entry into the home gaming device market, where it would rival Nintendo itself for many years to come.

From slot machines to video games

The history of the console manufacturer, Sega, begins in the mid-20th century but, contrary to what most people think, not in Japan but rather in the United States. Sega, in fact, although its name is linked to the Land of the Rising Sun, was born in May 1940 in American Hawaii, exactly in Honolulu, when three American entrepreneurs, Martin Bromley, Irving Bromberg, and James Humpert, founded "Standard Games" for the production of coin-operated entertainment machines, such as slot machines, to be supplied to American military bases located in the Pacific islands: the three rightly anticipate that the increase in military personnel caused by the onset of World War II will go hand in hand with the increase in coins poured into the "slot" machines during soldiers' leisure time. When the war ended, Standard Games was sold in 1945 and, in 1946, the same entrepreneurs founded "Service Games" to market that same type of equipment exclusively to military bases. In 1952, however, things change: the U.S. government bans gambling from its territories,

Fig. 1: Sega SG-1000
(source: Wikimedia - author: Evan-Amos)

Fig. 2 - The Sega Diamond Star 3, a slot machine from the 1950s. (source: Wikimedia - author: Rodw)

declaring slot machines and the like illegal. Bromley then decides to send Richard Stewart and Ray LeMaire to Tokyo to establish the "Service Games of Japan" to continue supplying slot machines to the American bases there. In 1954 the acronym "Sega" was first used as an abbreviation for Service Games on the Diamond Star slot machine (fig. 2). In 1960, the U.S. government began a series of investigations into criminal business practices, and to prevent its financial activities from coming under scrutiny, the founding partners decided to close Service Games of Japan at the end of May 1960. On June 3, Bromley founded two new companies to take over the business activities of the defunct Sega: these are "Nihon Kikai Seizo" and "Nihon Goraku Bussan." The former is controlled directly by Bromley and focuses on the production of slot machines, which it sells through its subsidiary "Sega, Inc.", while the latter is headed by Richard Stewart and operates in the market through "Utamatic Inc.", producing and distributing coin-operated machines such as jukeboxes.

The separation does not last long, as in 1964 the companies merge under the name Nihon Goraku Bussan.

At the same time, there is another American who is investing on Japanese soil: he is David Rosen, an Air Force officer stationed in Japan who, in 1954, starts a business of manufacturing and selling photo machines through the company "Rosen Enterprises." In 1957, seeing how the Japanese market was evolving, he decided to import coin-operated games as well. The company sees its business prosper so much that Bromley takes an interest in Rosen Enterprises, which he buys in 1965 and merges with Nihon Goraku Bussan to form "Sega Enterprises, Ltd." The new company soon abandoned slot machines and devoted itself exclusively to importing and distributing coin-operated machines such as Rock-Ola jukeboxes, Williams pinball machines, and Midway Manufacturing mechanical games. These machines have one defect: since they are mechanical in nature, the constant stresses to which they are subjected force them to undergo continuous maintenance. In order to decrease the costs resulting from importing spare parts, Sega decided to start producing the parts itself: from here to the production of its own complete games, the step is short and Sega ceases importing to devote itself exclusively to the marketing of its devices. The first electromechanical game produced by Sega is the underwater battle simulator "Periscope," which is so overwhelmingly successful that Sega decides to export it worldwide. The success of its Periscope leads the American group "Gulf and Western Industries" to take an interest in Sega, which is taken over in 1969. Gulf & Western reorganizes Sega Enterprises Ltd. as a subsidiary of a new U.S.-based company, "Sega Enterprises, Inc." During the 1970s, Sega produced several dozen games, both electromechanical and arcade. By the early 1980s it was famous for bar games such as "Head On," "Turbo," "Frogger," and "Zaxxon."

1982 saw the beginning of a downturn in the arcade industry resulting from the increasing popularity of home gaming systems.It was during that period of crisis that the president of the Japanese subsidiary, Hayao Nakayama, suggested to the American parent company that Sega should use the knowledge gained in game hardware development to produce and market a product for home gaming. Given the continued growth of the home computer industry, especially on American soil, the decision was made for the development of a computer of its own. During the gestation of what would later be marketed as the "SC-3000," Sega learns that Nintendo is developing a home game console so the company revises its plans and decides to enter that sector as well and, in order not to lose ground to its rival, it is decided to derive a console directly from the design of the SC-3000: thus is born what is later marketed as the "SG-1000."

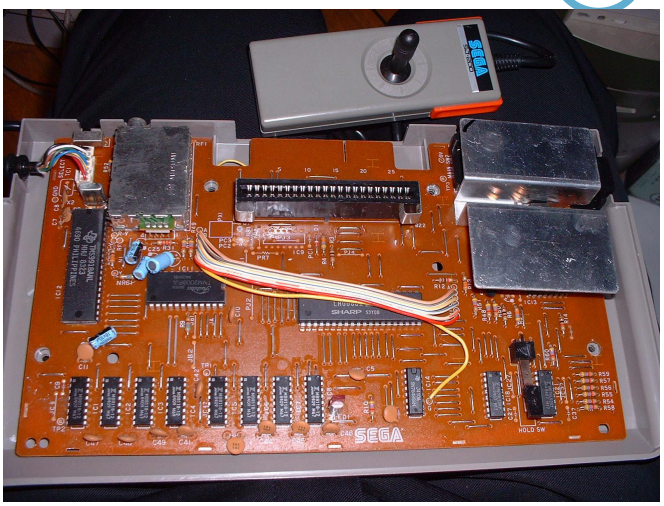


Fig. 3

Specifications

In order to keep the costs of the hardware system from which the SC-3000 and SG-1000 were later born low, it is decided to use normally commercially available components without using custom chips. Here, then, the Zilog Z80A processor, operating at 3.58 MHz, is chosen as the CPU, which is flanked by the Texas Instruments TMS9918A video processor, capable of generating a 256x192-pixel image with a 16-color palette and the ability to handle up to 32 sprites on the screen. This combination is so common that it is and will be at the heart of so many other similar systems, from the ColecoVision to the TI-99/4 to the more popular MSX computers. The sound chip is the Texas Instruments SN76489, also already used in many arcade games and home computers of the time and capable of 4 mono voices with an integrated noise generator. Console memory is 1 KB RAM for game data and 16 KB VRAM for the graphics chip's video buffer (fig. 3).

Externally, the case is made of white plastic, small in size and square in shape: on the top is a large white/blue band with the name "Sega" and that of the console, "SG-1000 Computer Video System," while, centrally, is the port for game cartridges. Toward the right is a curious generously

Fig. 4 - The SG-3000 home computer (source: Wikimedia - author: Bilby)

sized red button: it is used to pause the running game, a treat that very few consoles of the time offered. From the left side comes the (fixed) cable for the supplied joystick; to the right is a port for connecting a possible second joystick (not supplied). On the back are the power connector with the power switch, an expansion port for connecting external peripherals, the composite TV output, and a switch to change the channel on which the TV signal comes out.

Commercialization and divestment

The console is unveiled at the Tokyo Toy Show on July 15, 1983, almost simultaneously with the unveiling of the Nintendo Famicom, and put on sale at a price of 15,000 yen (200 yen more than the Nintendo product): along with the console, Sega also unveils the SC-3000 home computer (fig. 4). Despite the fact that the console is officially sold only in Japan, it is also put on the market under other names or through imports in some other markets, such as New Zealand, Australia, Spain, and Italy. In our country, the console and computer arrive imported by Melchioni, which, however, does not advertise it as much (this is said to have been because of losses caused by a fire that destroyed a warehouse full of other electronic products, which forced the company to reduce the budget initially planned for advertising Sega products), and because of this they disappear almost immediately from the market, selling only a few hundred units. In Japan, sales of the console went very well, thanks in part to the fact that the SG-1000 could, in its first few months on the market, offer more games than the Famicom, and that the latter manifested construction defects to its internal circuitry, forcing it to be recalled and, consequently, affecting its sales at least initially: by the end of 1983, the SG-1000 had sold 160,000 units.

Despite the excellent start, the new year saw a completely different scenario. Gulf & Western, to which Sega belongs, saw in early 1983 the death of its founder, Charles Bluhdorn: this led to a corporate reorganization with the sale of several non-key sections of the group. That same year the video game bubble also burst in North America leading to the industry's famous crisis, and Gulf & Western decided to sell in September 1983 Sega Inc. the U.S. division devoted to arcade development and all related rights, to Bally Manufacturing. The Japanese subsidiary, Sega Ltd. is initially kept but, because of this crisis, the company, which bases its business precisely on video games, is seen as a kind of boat sailing in unsafe waters and is therefore also put up for sale. Sega Ltd. is taken over by its former director Rosen and president Nakayama thanks to the financial support of CSK Corporation, a large Japanese software company. Isao Okawa, owner of CSK, becomes the president of Sega, while Nakayama is appointed as the new CEO. The new management, buoyed by the good sales numbers of the SG-1000, decides to bet on it decisively, and so the console is revised and updated: it is reduced in size, it is equipped with 2 joysticks both of which can be disconnected from the machine body, and the game cartridges are revised (the previous ones, according to Sato, looked like "little black tombstones"). The new console is renamed "SG-1000 Mark II" (or, also, "SG-1000 II") and unveiled on July 31, 1984, again priced at 15,000 yen (fig. 5): at the same time the discontinuation of the first model is announced. The console, however, begins to lose ground to the Famicom, both because the latter has superior technical features and because Nintendo forges a series of business partnerships with numerous game manufacturers and increasingly expands its range of exclusive titles. Sega, on the other hand, is reluctant to enter into commercial

Fig. 5 - Sega SG-1000 Mark II (source: Segaretro)

Fig. 6 - On the left is a ROM cartridge and, on the right, the Card Catcher adapter with a My Card (source: Wikimedia - author: Darktrym)

agreements with those same software developers who are perhaps its commercial competitors in the arcade industry and tends, predominantly, to develop its own games for the console. In order to catch up, Sega decides to begin development of the successor, which is unveiled in January 1985 as the SG-1000 Mark III and which, later, is also released outside Japan as the "Master System" (we will discuss it in a future article, because it has little to do with the SG-1000 I/II). Version II of the console is finally taken off the market at the end of the year, after having recorded total sales of 400,000 units.

Sega My Card

Games are initially distributed using the classic ROM cartridge common to all consoles at the time. Toward the end of 1983, Sega decided to introduce a new medium called "My Cards": compared to regular cartridges, these cards contain fewer electronics and a smaller container so that they are less expensive to produce and, consequently, have a lower selling price (fig. 6). Sega's intent is to distribute the games on a cheaper medium, but the systems targeted by the My Cards, namely the SG-1000 (Mark I and II) and the SC-3000, cannot read these cards: a special adapter, called a Card Catcher, must be bought, the cost of which eventually cancels out the economic advantage of the My Cards. The result is that only a few dozen games are offered on this format, which is updated with the release of the SG-1000 Mark III/Master System and disappears from the market in 1987.

Games and peripherals

The SG-1000 was mainly supported by Sega: most of the games, in fact, were developed in-house. This limited the number of titles available: there were, in fact, only 42

Fig. 7,8,9,10 - Bombjack, Zaxxon, Girl's Garden, Monaco GP (source: Gamespot)

Fig. 11 - The optional SK-1100 keyboard for the console, to which an additional tape player is also connected, to turn the SG-1000 into a home computer (source: Wikimedia - author: Darktrym)

games released on cartridge and 29 on My Card. To these are added 8 games released for the Othello Multivision, a clone produced under license by Tsukuda Original fully compatible with the original console and released only in Japan. The games are both conversions of Sega arcades, such as "Galaga," "MonacoGP" (fig. 10), "Zaxxon" (fig. 8), and games produced by third-party developers, such as "Bomb Jack" (fig. 7), "Lode Runner," "Hiper Sports," "Star Force," "Elevator Action," "Choplifter," and "Space Invaders." There is no shortage of original productions, such as "Girl's Garden" (fig. 9), conceived by the same programmers who would later give birth to "Sonic The Hedgehog."

The machine's capabilities allow for decent graphics and sound rendition but, often, the converted titles are not up to the standards of the arcade originals: this is not only given by hardware limitations but also, in some cases, by development that smacks of fact with minimal effort. Probably the non-excessive popularity of the console did not attract many developers, and those who did produce conversions for the SG-1000 did not put more effort into them, since the economic return from selling not a large number of copies of the games would not have repaid larger investments in their development. Too bad.

The last official games developed for the SG-1000 were both released in 1987: these were "Sherlock Holmes: Loretta no Shouzou," a graphic adventure that, due to the large amount of settings, is contained in a ROM cartridge of no less than 128 KB (on average, cartridges for the console range between 8 and 32 KB), and "The Black Onyx," released on My Card a month after the previous one (resulting, in fact, in the last official game released by Sega for its console).

Also distributed were 26 cartridges containing software of various kinds such as math programs, English grammar, image editors, and even a BASIC. These programs are intended primarily for the SC-3000 computer, but since the underlying hardware is identical, they can also be used on the console via the SK-1100 peripheral, a keyboard that can be connected to the console's expansion port, turning it into a computer. Software on cassette has also been released for the SC-3000 computer: these require an external cassette player, which can also be connected to the SC-1000 if it has the external keyboard (fig. 11).

The end-not-end

If one analyzes the market performance of the SG-1000 by comparing it to that of the consoles that came later or to that of some of its peers (see NES or 2600), the numbers of the Sega console are nothing special. But, the way things were planned, they are actually quite respectable: born with a sales forecast of only 50,000 units for its entire commercial life, it sold more than three times that number after not even 6 months of life and ended its commercial life with two unveiled versions and almost 2 million units sold, counting the numbers of the computer, with which it shared the same hardware platform, the clones, more or less official, sold mainly in Southeast Asia, as well as the consoles imported in those (few) countries it appeared in. The importance of the SG-1000 also lies in the fact that having succeeded commercially allowed Sega to be able to continue to invest in the home console market by later churning out such successful products as the Master System (an enhanced version of the SG-1000) and the Mega Drive/Genesis, with which it rivaled, and in some markets even excelled, rival Nintendo. So, thank you SG-1000!

The N Queens problem
(for Commodore 64)

by Eugenio Rapella

The N queens problem consists of placing, in an N*N square chessboard, N chess queens so that none of them threatens one of the others (the chess queen threatens the pieces that are on her line, her column or the diagonals parallel to the two diagonals of the chessboard).
In his "Elementary Algorithms" (a truly splendid book), Nicolò Pintacuda proposes an extremely concise code (it is six instructions in Basic!) for the classic case of an 8*8 chessboard; my contribution consists of a couple of variations so that the program solves the problem in the N*N case and the entire chessboard (and not just the number of the queen's placement column in the eight rows) is printed.

The technique used is that of "backtracking": after placing the first queen in the first row, first column, the program moves to the next row and a queen is placed in a column compatible with the constraints of the problem. This is continued; if the column is not found, the program performs one or more "backtracking steps": it changes the previous placement so as to unblock the situation and resumes the process. When it has placed the N-th queen, the program prints the "solution checkerboard" and proceeds to search for new solutions. Stopping occurs when the program can no longer proceed; in this case all solutions have already been printed (note that, for N=2 and N=3, the problem admits no solution and therefore nothing is printed).

Our Commodore gets away with 12 instructions, not bad for a not-so-trivial problem.
Here it is:

```
100 print chr$(5):poke 53280,6:input" n = ";n
110 dim dp(2*n-2),ds(2*n),c(n),x(n):k=1:s=1
120 for w=1 to n:a$=a$+chr$(108):b$=b$
+chr$(164):next
130 j=j+1:if j<n+1 then if c(j)+ds(j+k)+dp(j-
k+n-1) then 130
140 if j>n then k=k-1: goto 210
150 x(k)=j:c(j)=1:ds(j+k)=1:dp(j-k+n-1)=1:if
k<n then k=k+1:j=0:goto130
160 print s;"> ";:for t=1 to n: print x(t);:
next:print:s=s+1
170 print b$
180 for t=1 to n
190 print left$(a$,x(t)-1)+chr$(113)+left$
(a$,n-x(t))+chr$(165):next
200 print"--------------------------------
------":print
210 if k then j=x(k):c(j)=0:ds(j+k)=0:dp(j-
k+n-1)=0:goto 130
```

At 100 you set the font color (white), border color (blue), and are prompted for the checkerboard size (N); at 110 you do the initializations and ritual sizing (we'll come back to that).
At 120 we prepare two strings that are used to print the checkerboard: A$ consists of a sequence of N CHR$(108) symbols (a kind of capital L: └), B$ consists of N CHR$(164) symbols (this is the underscore: _). Printing B$,A$,A$, ... , A$ gives the squareness of the checkerboard.

The actual program begins at 130. J will contain the number of the column, K the number of the row of the box being analyzed; both of these variables will be between 1 and N. In the Basic of the C64, a numeric variable that is not initialized is worth 0, so the first time instr. 130 is executed, the variable J takes the value 1. The same holds true for the vectors DP(..), DS(..), C(..), X(..), which, at first, are all null.
To describe how the program works, consider the classical

case N=8; the meaning of the vector X is this: if X(ALFA)=BETA it means that in the row ALFA there is a queen in the column BETA. Thus, if X(..)=1,3,0,0,0,0,0,0, in the first two rows are placed (legally) two queens in columns 1 and 3, respectively.

The role of the vectors C(..), DP(..) and DS(..) becomes clearer if we continue with the analysis of this intermediate situation: a queen is placed in the box (1,1), a queen in (2,3). Suppose the program is evaluating the next lawful position, that is, a queen in (3,5). Right now it is K=3 and J=5. To occupy a recognized lawful position, instruction 150 comes into play: X(K)=J, i.e., X(3)=5 - in the third row the queen is placed in the fifth column -; C(J)=1, i.e., C(5)=1 the fifth column is "committed."

Now the squares on the main diagonal (the one parallel to the diagonal joining the squares (1,1) and (8,8)) and those on the secondary diagonal (parallel to the one passing through (1,8) and (8,1)) are to be marked as "busy". The main diagonal relative to the box (3,5) consists of the boxes (1,3), (2,4), (3,5), (4,6), (5,7) and (6,8) and is identified by the difference J-K which, in our example, is worth -2.

To the vector DP(..) the task of signaling that that main diagonal is now committed: DP(J-K)=1 (1=committed, 0=free). In the N=8 case, the J-K differences range from -7 (J=1, K=8) to +7 (J=8, K=1); to avoid negative indexes, we will sum +7 to the index so that it ranges from DP(0) to DP(14). We now explain DIM DP(2*N-2) in 110 (in fact, for N=8 we get precisely DIM DP(14)) and the instruction DP(J-K+N-1)=1 in 150 (in fact, for N=8 it is N-1=+7).

A similar argument applies to the secondary diagonal, which, in relation to the box (3,5), is formed by the positions (1,7), (2,6), (3,5), (4,4), (5,3) (6,2) and (7,1) and is thus identified by the index J+K, in our case equal to 8. So the assignment DS(J+K)=1 in the 150 stands to indicate that the diagonal in question is committed. Since the line and column indices range from 1 to N, J+K reaches the value N+N and this explains the DIM DS(2*N) in the 110.

That said, we can follow in detail how our Commodore works: the first time instruction 130 is encountered it is K=1, J=1 and the contents of all vectors are ... zero.

In the Basic of the C64, the instruction IF W THEN... is equivalent to IF W<>0 THEN... , this means that the IF in 130 is in charge of checking whether "column-secondary diagonal-main diagonal" relative to the square in play are all "free": it is enough that even one of the three values is not zero that we return to 130 where J is incremented to search for a new "papable" square. At the beginning, however, C(..), DS(..) and DP(..) are all zero so there is no return to 130. Also at the beginning is J=1 so the IF at 140 is not verified and the program continues to 150.

This is where the queen is placed (X(K)=J) and the column (C(J)=1) and diagonals are engaged.

At the beginning (K=1) it is undoubtedly K<N so that, at 150, K is incremented (we move to a new line), J reset (so that, at 130, J will restart from 1) and we return to 130 for a new attempt to place on the next line.

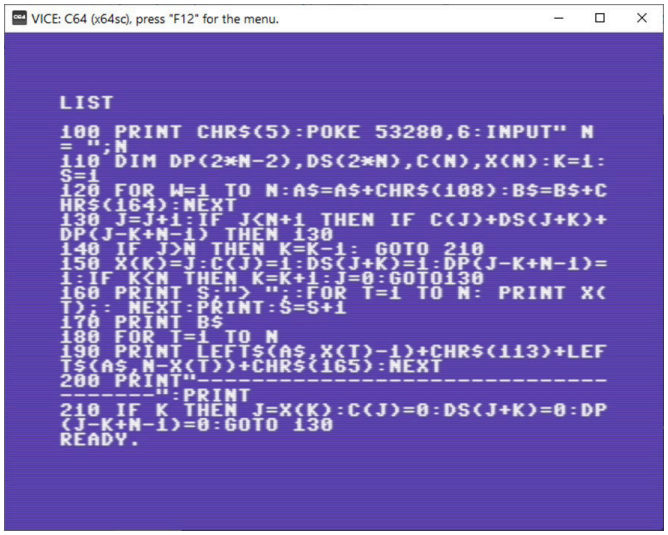
As mentioned, for a fixed line K, in 130, the column index J is incremented in search of an acceptable position for the queen. However, if J exceeds N, it means that a useful position has not been found in the line under consideration and it is necessary to ... step back. At 140 K is decremented (you go back one row) and at 210 the column index is reset to that for the previous row (J=X(K)) and, when you then go to 130, it will be incremented by one unit in search of a new arrangement. At the same time, again at 210, the column and diagonals are cleared for undoing.

Instruction 160 is arrived at only when K, the row index, reaches the value N. In this case, the N queens have found a satisfactory location and printing takes place: the variable S, initially set equal to 1, acts as a counter and contains the number of the solution presented, a number that is printed along with the queen's column number for the various rows. Instruction group 170-200 deals with the printing of the checkerboard. At 170 the top border is printed, then, for each row, X(T)-1 empty squares are printed, then the character representing the queen (CHR$(113)), another N-X(T) empty squares, and the character CHR$(165) that completes the last square on the right so as to obtain the checkerboard.

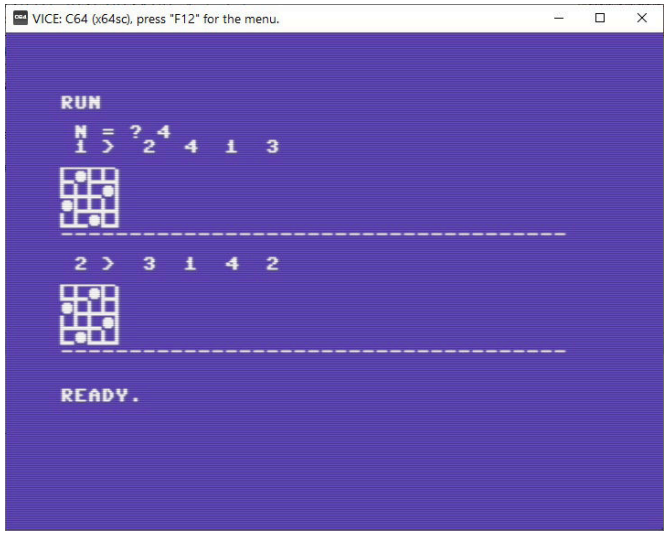
The program continues to search for other solutions until, by dint of backward steps, K is reset: all solutions have been found and printed.

The Wikipedia page "Eight Queens Puzzle" is full of information, in particular the number of solutions as the size of the board varies is reported. Try the program for N=5 and you will quickly get the ten solutions (in general, the number of solutions grows as N increases with one exception: for N=6 there are four solutions); with N=7 the C64 offers you all forty solutions.

Below is the listing as it appears on the C64 screen:



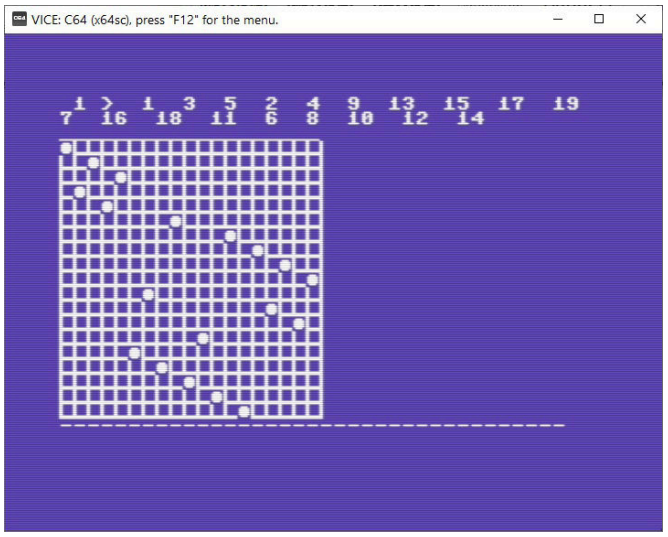
And here are the two solutions of the N=4 case:



As N increases, the processing time can also increase dramatically to get the first solution; the time depends greatly on the number of "steps back" the C64 is forced to take. For example, for N=12, the VICE emulator took about four minutes to find the first of 14200 solutions while for N=13 it took only one minute to find the first of 73712 solutions.

It took about 50 minutes to get the first solution in the N=19 case (dear C64, your Basic interpreter is not a champion of speed, but we love you anyway).

Here it is:



I advise against the N=20 case unless you start the C64 and then go on a vacation to the Maldives...

Two more words about the algorithm used: the backtrack. As Nicolò writes, it is an example of a "non-solution": it is not an algorithm built for the specific problem (there are some), simply reviewing "candidate solutions" (admittedly, in a rational and orderly way), looking for those that satisfy the required constraints. This "universality," however, is often counterbalanced by ... poor efficiency.

Regarding the classical problem, N=8, Gauss found 72 solutions; the C64 finds all 92 solutions in about 20 minutes.

Final result: Commodore 64 beats C.F. Gauss 92 to 72.

Not an easy achievement!

Interview with Charlie Hitselberger, author of PETTIL

by Carlos J. Vazquez II

From Charlie Hitselberger's Github page:
https://github.com/chitselb/pettil
PETTIL is my implementation of the Forth programming language, following the FORTH-83 standard.
The goals of this project are, in no particular order:
- (PETTIL) make a Forth that works on my Commodore PET 2001.
- (PETTILmob) find others interested in this project.
- (PETTILmini) Raspberry Pi PET emulator with a replica keyboard/case
- (PETTILmobile) tour the U.S. in a bus a vintage computer museum
- create YouTube videos
- Improve my "golf code 6502" skills
- enjoy myself!

Carlos Vazquez:
Ok, first things first, what is pettil?

Charlie Hitselberger:
PETTIL is a Forth implementation for the PET, but it's also a Forth implementation for the entire line of Commodore 8-bit machines, even the B128.
I started working on it in 2010, because I hadn't done much with my PET in 25 years.
My intention with PETTIL is to make as much of the machine available to the user/programmer as possible, and do so in a minimum number of bytes and clock cycles.

What software do you use to develop Pettil? If you use real hardware, what pet model do you own?

I started off development by finding a copy of FIG Forth and loading it on real hardware, which is a PET 2001-N serial #700251. That PET was about the tenth machine I ever programmed, but the first real computer I ever bought. Dave McMurtrie in Pittsburgh, who runs the Commodore International Historical Society group, was able to get it running again after it stopped working in 2019. There is also a VIC-20 that will be a part of the museum setup.
Michael Tomczyk was kind enough to autograph it for me at the Kennet Square Classic computer museum a couple of years ago.
My hardware has a PETdisk and a PETvet inside, and back in 1983 I made a "sound card" out of Radio Shack parts, for the CB2 mono speaker output. That's mounted inside the case under the monitor.

That's what I call a super pet (Pun Intended)!, Will pettil run on an unexpanded Vic?
How about other 6502 based machines? How do you got involved in computer programming?

PETTIL separates the symbol table from the code, so after compilation, all 5K or so of the symbol table, and the 6K or so of 'STUDIO' code can be eliminated too.
This leaves 5.5K of CORE. Since all the source code for PETTIL is provided as part of the system, you could knock out some more words you never use from this CORE and make it even smaller.
The compiler is also responsible for paging, so one of PETTIL's tricks is to do NEXT in only 15 clock cycles.
When it's time to jump to the next page (256 byte section of memory) the compiler inserts a word called PAGE in the dictionary at the top of each page.
Only PETTIL does this. Other 6502 Forths take about 34-36 clock cycles to increment the two-byte instruction pointer.
An unexpanded VIC-20 would be a hard fit for PETTIL but PETTIL could be used to generate code targeted at that 3.5K machine.
As for my start in programming, in 1977 I changed high schools, and the new school had a few Wang 2200 machines. Two had 4K and one had 8K of RAM. In my second year on those computers, I managed to shoehorn Mike Mayfield's "Super Star Trek" game into the 8k Wang 2200.
In 1979-1980 there was a PDP-10 running TOPS-20 at

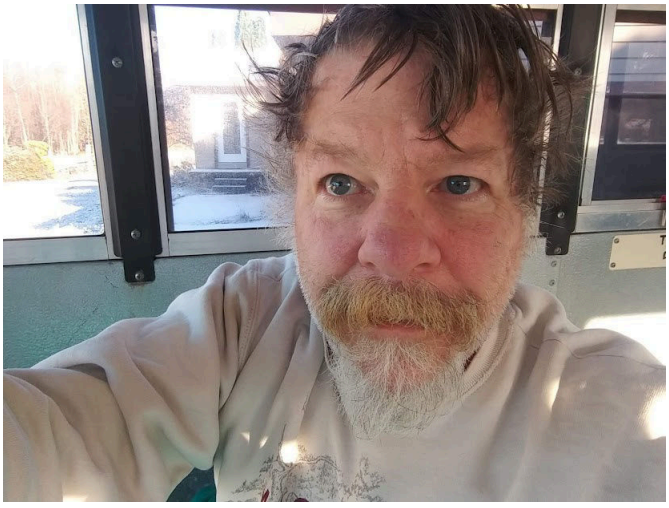


Fig. 1 - Charlie Hitselberger

Fig. 2 - Museum on wheels

the local community college, and I had access to that.
The school I went to for my last year in high school, in Michigan had a TRS-80 Model 1. Our physics teach brought in his PET 2001 (8K, built in 1977).
I had a TI-59 calculator with the printer that year, but it wasn't until I bought the PET in 1980 that I felt like a computer owner.

Super Star Trek was the first experience in basic for a lot of kids back in the 70's! you talked about a museum setup, can you tell me more about it?

In 2010, International built a school bus and Prince George's County (MD) drove it around with kids in it for 10 years. In 2018 I started doing this project, and it was always a plan to release PETTIL, to put up a bunch of videos showing how to program a PET like this, and to take it on the road (lower 48 states) in a school bus computer museum.
I want an octagonal tunnel down the middle of the bus, to remind participants of the 2001 movie that gave the PET its visual inspiration. This will help bring us back to time of the personal computer revolution. After a brief introduction to the history of this era 1974-1984, we'll spend the rest of the hour programming the PET on emulators.
The museum will travel to all of the lower 48 states in one year, according to the plan, and after that, we should have a lot of PETTIL programmers out there having fun on 8-bit computers!
It's lonely to write a programming language and be the world's only programmer in it.
This week I've got the bus in the shop, and I'm driving to Upper Michigan at the end of the week to install wool insulation and fix holes in the floor. The bus is in "rolling metal garden shed" mode right now and the project funding been very limited.
It's important to understand that PETTIL is unreleased, and could use some help.

How can anyone contact you if they want to help you with coding on the pettil project?

PETTILmobile@gmail.com is the official project email, and I am putting PETTILmobile.com back up as soon as I can get it ready. It's a little different than an ordinary job in cubicles, which is what I did from 1982-2018 before starting this quest.
Look for a release of PETTIL in August of this year (2023).

The museum should be a fun ride!, It looks like we will be expecting the museum on Wheels pretty soon!
Will PETTIL be only available for the pet 2001?

I'll need money to build it, and nobody is hiring 6502 programmers this year. But I have a plan where the language and videos about the project will create that opportunity to do the museum and plot out the 100 ZIP code tour.
PETTIL has a metacompiler called PORTIL, and PORTIL will be included as part of the release. The bootstrap version (PETTIL before PORTIL) is a set of text files with a dodgy batch of scripts to build it. It's really shameful how I coded this. I'm moving PETTIL's bootstrap code over to CBM Prg Studio, to see if that will make it popular enough for some other devs to help out.

The more you talk about it the more I get hyped about forth!, Since it's being coded in 6502 assembly language that means that we could expect an apple][version sometime in the future?

There's also a test-driven development suite called PERTURB. When PETTIL can be built by PORTIL and passes all PERTURB tests, for all the machine targets, that is "released" (most 6502 based machines could be a possible target).
Forth is a cult language, to be sure. I'm a wild-eyed fanatic for Forth and have been since I discovered "Threaded Interpretive Langauges" a book by R.G. Loeligar in 1982. That's the TIL part of PETTIL.
Starting Forth and Thinking Forth by Leo Brodie are the best place to start. Read anything by Jim Butterfield to get a handle on 6502 assembly language.
Having PETTIL run on Apple and Atari 8-bit systems too? That would be ideal!
I leverage the PET screen editor pretty heavily. My editor is a traditional Forth "block" editor. Since there's no CTRL

or ALT key on a PET keyboard, I use the STOP key as a command prefix in the editor.

Some games like Star Flight and Lord Of Conquest from Electric Arts where written in forth, do you have planned any support for gaming features of specific machines (like the commodore 64 sprites and sound) on pettil for those platforms?

PETTIL for the C=64 will have a vocabuilary for sound and graphics. The object of PETTIL is to provide complete access to the machine, and different hardware will be fully accommodated.
It also has to run on my plain old PET with just a cassette tape.

That would be fantastic!, This would be forth to another level!

Blazin' Forth on the C=64 is pretty good already. It even uses the traditional Forth block editor, but it's designed a 16 line by 64 wide screen, which is not a C=64. PETTIL's screen editor is WYSIWYG, a much better place, say, to draw the graphics for your new game.
Where PETTIL will be useful is to create a Forth bridge across multiple Commodore machines, and possibly bridge the Atari and Apple gap.

This would make pettil a complete platform for game development on 8bit computers!

Mostly I want people to understand how a computer works from the bare metal level, what does a 6502 do on each clock cycle when it executes an instruction.
Putting Forth on top of that should make it easier to understand how getting that power felt to me, back then.

Multiple 6502 based computer support with one piece of software would be amazing, talk about cross compatibility!

It's Forth. If you're seen one Forth implementation, you've seen one Forth implementation. I take care to adhere to the Forth-83 standard. But even so, that's about three standards behind the current standard.
I chose Forth-83 because it makes the most sense for this hardware. Trying to pile the whole kit and kaboodle of an ANSI Forth into a PET is a lot more work.
This project is about minimalism, and having just enough to get there from here.

Fig. 3 - PETTIL

We grew up with computers that had easy access to programming languages, what would you tell our younger generations so they would take up computer programming in this age of GUI's and overlly complicated programming languages?

Von Neumann computers are still around. Moore's Law has been doubling computer power for decades now. The cloud is another name for "someone else's computer." Get a firm understanding of how it works at the bottom layer and then go build something incredible on top of that foundation.

Awesome! Now one final thought, can you give us an example of a hello world program in pettil forth ?

```
: hello  ( -- )
   ." Hello, PETTIL" ;
```

in PETTIL, graphics and uppper/lowercase are all different characters.
Put another way, PETTIL is case-sensitive.

Thank you for taking some time to talk with us about pettil, I'm sure our readers will thrilled to read about pettil and the amazing story behind it!

It will be better when we can all play around with it on a PET.
Thank you for talking to me.

Interview with Erik Hogan, father of the Scorpion Engine

by Carlo Nithaiah Del Mar Pirazzini

The Scorpion Engine is getting a lot of talk. It is a software for developing titles on Amiga and (recently) also on Sega Megadrive.
A great many have used it and are using it to make excellent conversions (I cite Wonderboy as an example, which is practically perfect).
We caught up with Erik Hogan aka Earok to chat about the past present and future.

Fig. 1 - Erik Hogan and his mascot

Tell us a little bit about yourself. How did your passion come about?

Erik - My name is Erik Hogan, I work in game development for educational titles by day and the Scorpion Engine by night. My parents bought their first computer-a C64- when I was two years old, and it wasn't long before I longed to make games of my own design.
Since I didn't really have access to programming materials I waited a while, until I was about 14 years old and received a copy of Klik N Play for PC.
I found that I enjoyed creating games as much as playing them, and the ease with which games could be created with Klik N Play inspired much of the design of the Scorpion Engine.

Your SCORPION ENGINE is becoming the standard for developing and porting many Amiga titles. Where did

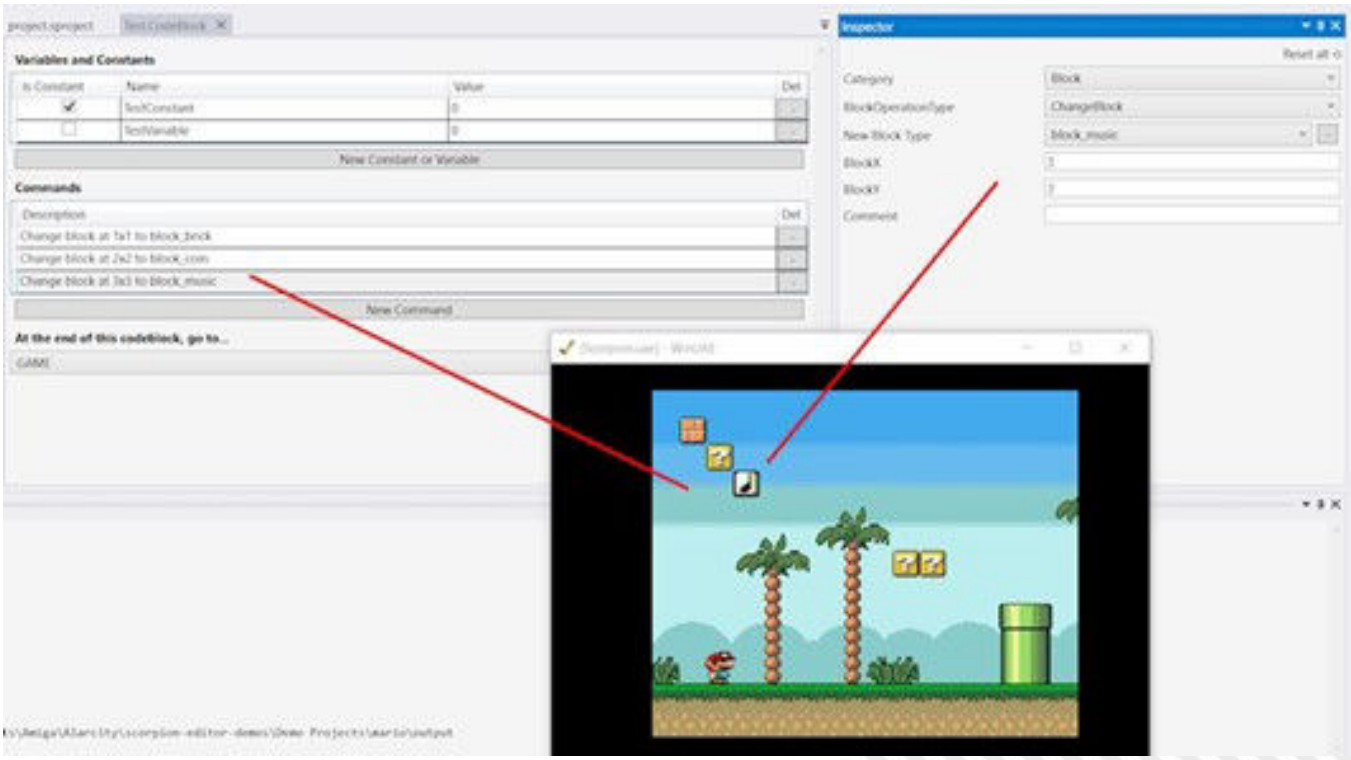


Fig. 2 - The easy-to-use visual scripting system for Scorpion, which replaces the text script derived from "ink"

Fig. 3 - Experiments on Sega Megadrive. The Scorpion lends itself perfectly on machines equipped with Motorola 68000

Scorpion come from and where is it going in the future?

Erik - Ahh, I wouldn't say that's the standard! Scorpion has helped many more people create Amiga games, but there is a large and even growing number of amazing ASM, C and Blitz games being developed by the community. Scorpion originally came from a proposal by John Tsakiris to develop a Scorpion Engine port of Tales of Gorluth 3- although that project has not yet been completed, the engine that was developed to power the initial prototype has been under constant development ever since. In the future, I plan to continue on the current path, adding new features, expanding the systems it supports, and continually modifying and optimizing the code base.

You opened up the possibility of development on Sega Megadrive. How come?

Erik - There are many differences between Mega Drive and Amiga, but also many similarities. The 68K processor runs them both means that much of the Scorpion Engine can be reused without modification, which is especially important since the code base is written in a mix of 68K assembly language and Blitz Basic.

The desire to support the Mega Drive comes from the

Fig. 4 - Alar City in all its glory!

large community surrounding it, as well as my own enjoyment of Sega consoles. In the next couple of years, I would like to see if I could expand Scorpion to support other 68K platforms such as Atari Jaguar and Neo Geo.

Tell us a little bit about your future plans?

Erik - It is likely that my future projects will be games made with the same Scorpion, and I will continue to improve the scope and speed of the engine as I develop those games. Alarcity is obviously the main one, I am well aware of how far behind the game is, but I promised to complete it and I intend to keep that promise.
Beyond that, the aforementioned Tales of Gorluth is still on my radar, as are a handful of contracted game ports.

Thank you for this brief interview.

Erik - Thanks to you at Retromagazine World for the space. I read you often on social media and in the magazine. Keep doing what you do. You are a great source of information that we small developers really appreciate.

The Scorpion Engine can be found at:
https://github.com/earok/scorpion-editor-demos.

You can follow our friend Erik on social media at the following pages:
https://www.facebook.com/earok
https://www.facebook.com/scorpionengine

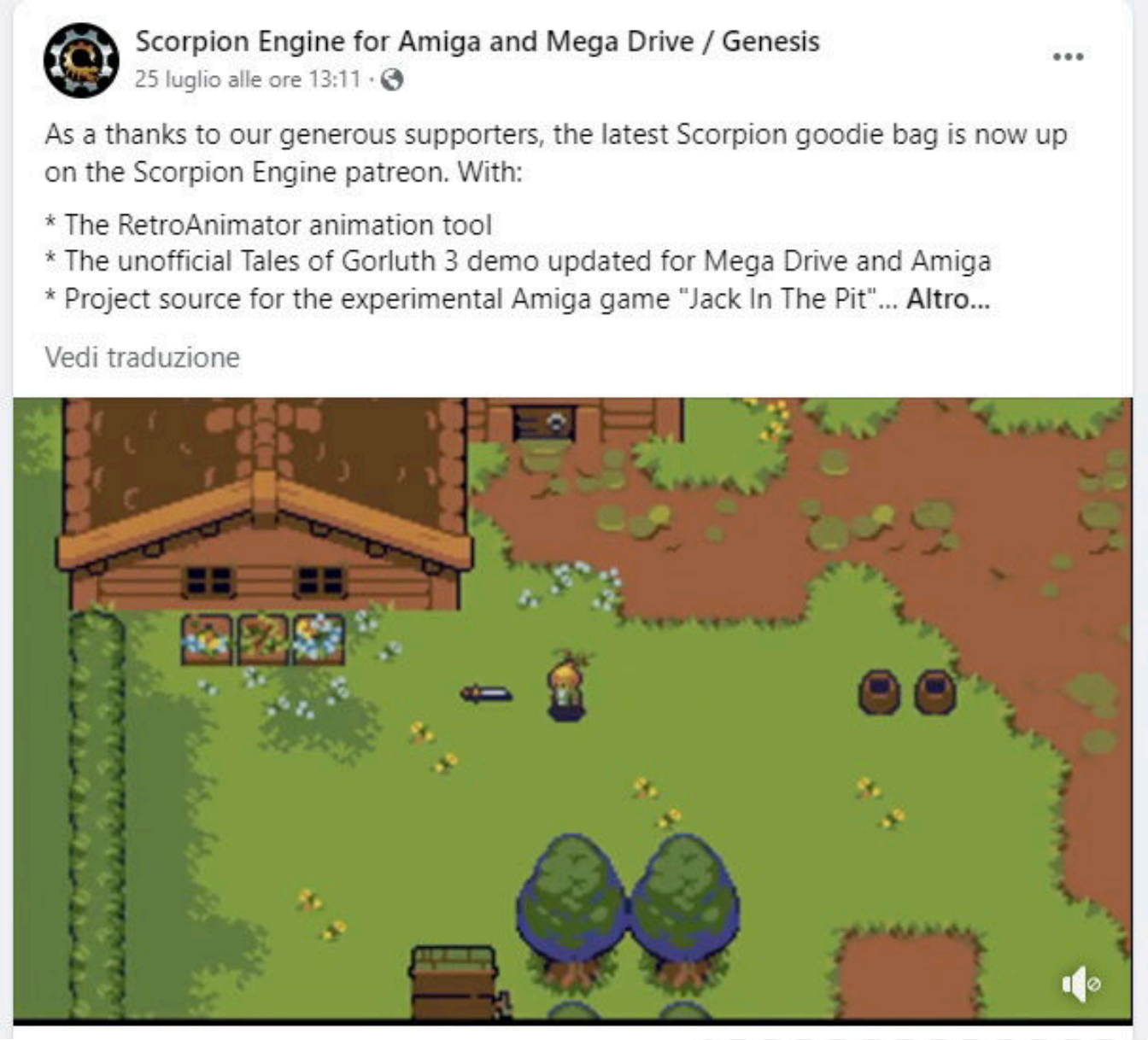

Scorpion Engine for Amiga and Mega Drive / Genesis
25 luglio alle ore 13:11 ·
As a thanks to our generous supporters, the latest Scorpion goodie bag is now up on the Scorpion Engine patreon. With:
* The RetroAnimator animation tool
* The unofficial Tales of Gorluth 3 demo updated for Mega Drive and Amiga
* Project source for the experimental Amiga game "Jack In The Pit"... Altro...
Vedi traduzione

Fig. 5 - Scorpion Engine for Amiga and Mega Drive/Genesis

Commodore 64 OS – The new operating system

by Takahiro Yoshioka and Epsilon

I have followed the development of C64OS with interest. Its author, Gregory Nacu has made numerous youtube videos, dozens of test documents on the official page, and numerous tweets of updates.
In late 2022 he released the package, and now we can take a look at it, complicit with the fact of the newly released 1.04.

What is C64 OS?

An attempt to create a new fast operating system for the C64 with a unique, simple and functional user interface, all within the limitations of 64k memory.
It comes on a 16mb (STARTER package) or 64mb (STANDARD package) SD card, designed for use with hard disk solutions such as SD2IEC, IDE64, RAMlink, and CMD. It costs about 40 euros ($45 US) in the STARDARD version, the one used for testing, to which we must add shipping and taxes. At present the STARTER version is sold out.
Unfortunately, the system does not work on Ultimate II/ + 1541 or Chamaleon (and similar hardware). This represents an issue as these are more common systems for enthusiasts. In any case, the requirements to be able to use the OS are on the Web site.
We opted for a 2D2IEC Fastload. After connecting the cart to the C64, I prepared the SD card according to the instructions in documentation or always on the very efficient website.
At power-up I received the FASTLOAD prompt, enabled for disk loading.

Before working on the SD I recommend that you back up data to a folder on your PC. This is because the installation

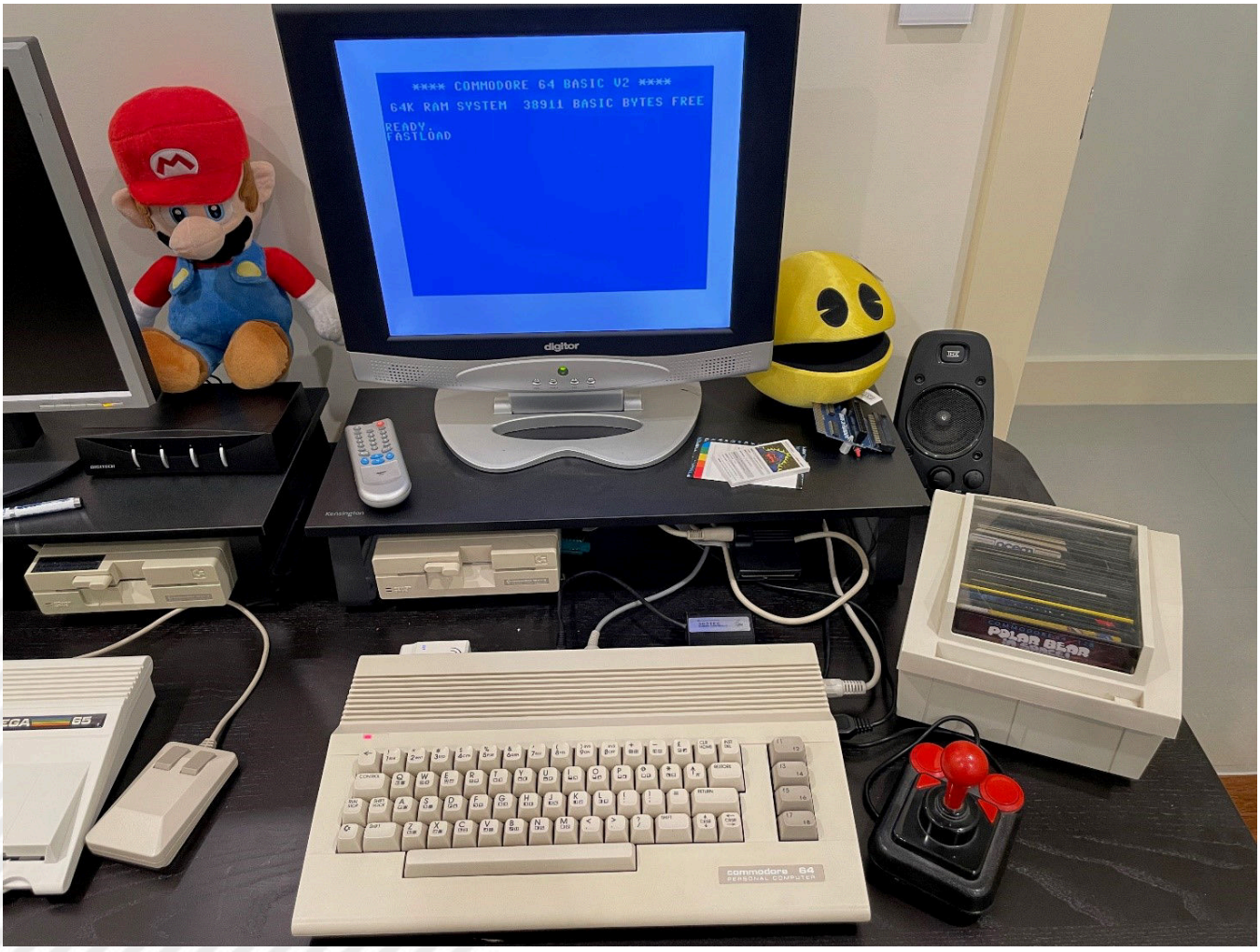


Fig. 1 - The computer ready to host the C64 OS

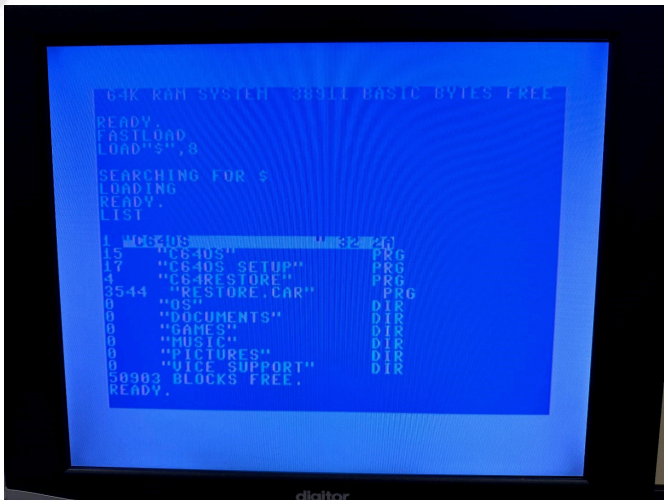


Fig. 2 - The screen with the SD directory

Fig. 3 - Configuration menu

process modifies some content and this step is precautionary. That done, inserted the SD into the SD2IEC cartridge and loaded the directory, I proceeded with the installation.

You start by typing "LOAD "C64OS", 8 to begin, this procedure starts the actual installation. You will accept all the terms and conditions and continue.

Several installation modes can be chosen including one that installs the entire system from scratch. The whole thing proceeds through setup and takes several times to complete.

Once you are done, you move on to the configuration commands that allow you to install the mouse for example (if you have one, install it without fail) or the joystick to be able to move between the many windows.

You can then choose the display configuration (always preferable GO MENU Places, i.e., the default one) and you can proceed to testing.

When booting the C64, simply type "C64OS",8 and then Run to launch the system.

The initial loading is not the fastest, and certainly Fastload helps make our lives easier.

The main welcome screen shows us a colorful menu and a bit of development information.

There are File, Option and Go menu items at the top of the title bar, along with the date/time on the right side. Navigating and pressing the button selects the desired option and continues. With the joystick navigating is somewhat difficult.

From the file menu you can change or save wallpapers, add aliases to programs on the SD to appear on the desktop, and copy and move functions as well.

In the options menu, there are various information about adjusting colors, options for information, saving settings, and the ability to return to Basic.

The last menu, Go, scales the desktop, allowing us to

Fig. 4 - The initial screen

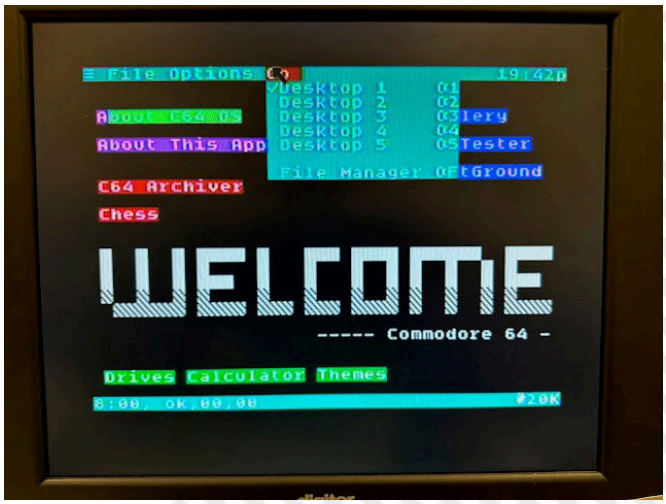


Fig. 5 - The GO menu with options to access the different desktops where to open applications

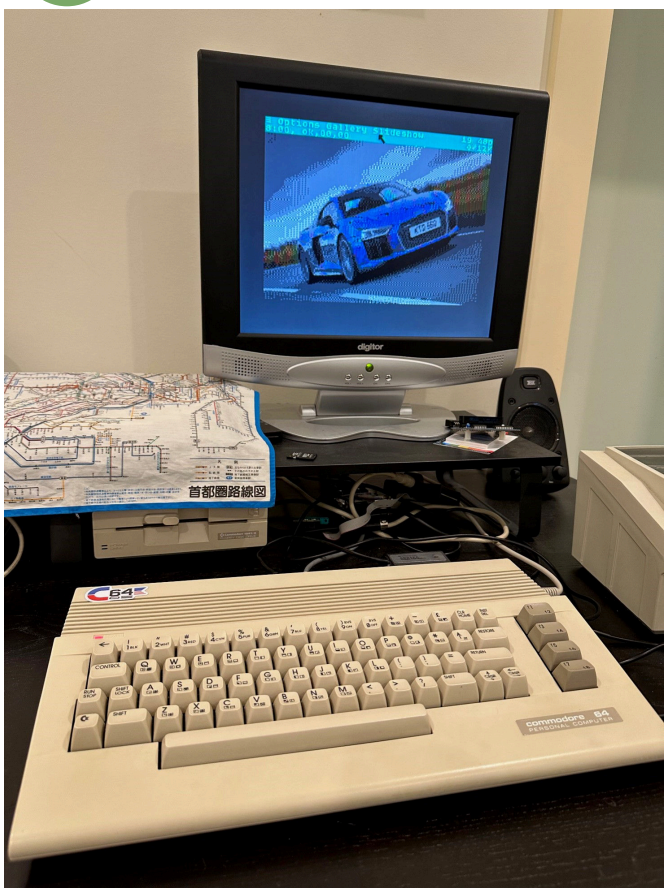


Fig. 6 - Gallery at work

watch what is happening. A rudimentary but effective version of the desktops seen on Linux or macOS. In addition, it is always possible to call up the file manager from this menu.

If we click on the alias of the Drives app on the desktop we can choose to access the SD card or a connected floppy drive, displaying the contents.
From here you can also see the Calculator app, a quick calculator that we can call up in standard or scientific versions.

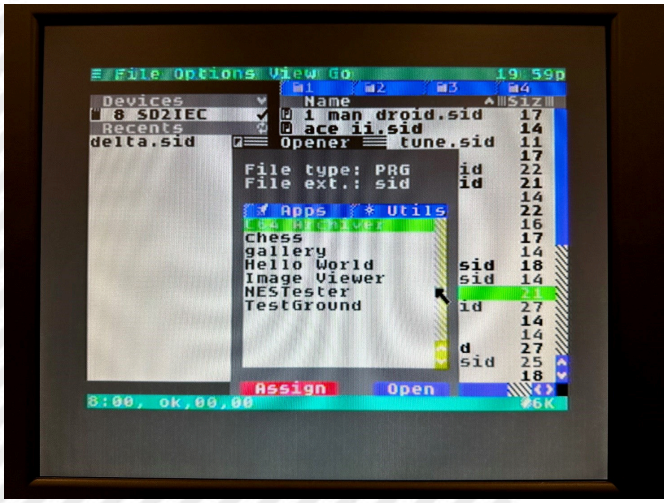


Fig. 7 - The file manageri

Very interesting is the Gallery App, where you can view by custom categories photos and animations (in C64 graphic format). The displayed photo is shown to us with lots of information about what we are viewing, the format used, the size, and the author. Notable.

The file manager is also well developed, with a structure and layout that reminded me a lot of DESQview on MS-DOS. Allows up to 4 tabs to be opened, each with different positions and able to copy between them as well. Functional. Some files unfortunately are not easily reproducible, and you have to handle for a while before you can figure out how to do it.
In any case, interesting.

I also found the text editor well done, which allows us to work quickly so that we can make quick texts or notes.
There is still so much to see about this C64 OS. For example, it is highly customizable through the configuration of desktop themes.
During the test we never had any issues. It never crashed and it was peculiar to see a fast operating system running in only 64k Ram.
It is very pleasing that the developer continues to implement functions and applications in the many updates.

The expense may not be the lowest, but it is indeed an interesting experience.

The C640S can be found here:
https://c64os.com/

Are video games at risk of being lost?

by Mic The Biker Novarina

The percentage chills: 87 percent. This is the huge number of extinction-risk securities on the market today. This figure refers to the American market, but I believe it may be similar for Europe as well. The announcement leaves no room for misunderstanding: following some research, the Video Game History Foundation concluded that 87 percent of classic games published in America are "in grave danger." A big clarification must be made: the figure refers to titles no longer on the market in the physical sense, that is, purchasable in the original. And obviously new. Reading the article one immediately realizes the situation by thinking about books. Going to any bookstore it is very normal to find reprints and reissues of books that came out years ago. Mind you, not books by Plato or Sophocles but an ordinary "IT" by Stephen King, purchasable new at a more than popular price. Here, imagine if the same thing happened for books as for video games: the novel in question, which came out in 1986, would be a collector's item exactly like "Metroid" for NES, which on Ebay fights from 150 euros and up for a boxed cartridge. The average is resounding: almost nine out of ten titles, according to the foundation, are no longer found for sale new. Compared with the tons of movies, books, CDs and vinyls that can be bought new (and legally) today, even if they are decades old, the figure makes your legs shake.

Killer Restrictions

Reading the article in "The Register" we learn that the crux of the problem is the restrictions put in place by America's Digital Millennium Copyright Act (DMCA), which prevent games from being lent digitally by libraries and other institutions. Something has moved in recent years, with some large software houses republishing, often in digital versions, some great classics. Evercade has been periodically coming out with cartridges containing excellent themed titles since it came on the market, such as Namco, Atari and recently Commodore 64. Of course, in the absolute welter of rights to these games, the British house fishes only on regularly licensed titles: speaking of the cookie ones, they are the same ones found on TheC64, maxi and mini machines. This and little else is part of the fateful 13 percent of videogames legally produced and sold. Since the boom years of "home" video games, the list of titles released has been boundless even if we take into account consoles alone. If we then get home computers in the way, the risk is that three lifetimes is not enough to list all the games released over time. In the most optimistic case we get up to 20 percent of the titles, but that is still a small number.

New Hardware, New Software

The video game in the totality of its meaning has one major misfortune: to be probably the most glaring example of planned obsolescence. Since the dawn of videogaming times, the "old" systems, and related games, have always been sidelined in favor of the newer, more modern system, which was bound to end up the same way anyway. The bulk of the problem then lies in the uniqueness of the format. A vinyl will run on any turntable, while a Megadrive game will not run on any console. Virtually nonexistent backward compatibility did the rest, causing entire video game collections to disappear. Old machines were not keeping up, and there was no interest in being able to run old games on new technology. After all, who could care about one more game of the usual Out Run when you have, for example, the new Gran Turismo in your hands? But time, without anyone noticing, went not in a straight line, but in a circle. And now Gran Turismo 2 is getting a

vintage look, just like Sega's historic driving game. We have the brand-new, flamboyant Forza Horizon, but that damn driving game with licenses still has a lot to tell us. Can it be found new and original? No. Here, the problem returns, and we're not talking about an Intellivision game. Video games, do we only risk them?

Blunt and honest, my answer is NO. Video gaming itself is a form of culture, on par with music and reading. It may sound like blasphemy, but through video games one can trace epochs, narrate historical periods, for example that of "when there were arcades." They were not just a haven for nerds, they were real gathering societies. We risk not only losing the video game in its physical state, but also its ethereal plane, and with it all the memories it carries. Understand that just as it makes sense to reprint an old Beatles vinyl, or a great literary classic, it can also make sense to reprint old games. I say can because at the end of the day, video games are saved anyway, thanks to what is superficially called "piracy."

Some will say that in the end it is probably mere collecting. It may be, since a large percentage of those who buy books often don't even read them, they buy them to keep them on display in their home bookcase. And those who buy the reissue of Black Sabbath's first vinyl do so out of collectibles, because perhaps 50 years ago they held an old edition taken original and then sold years later, perhaps to switch to CDs. It all adds up.

WE, the old human network

I pointed this out in the not too distant past in an article written jointly with my friend and brother Roby Geo. We were the vital network, we continue to be today. There are those who had the foresight (or the ass) to keep it all aside in a trunk, and now that old C64 is up and running again as in the old days, with original (and even non-original) tapes and floppies. Or there are' those who have jumped into the world of second-hand, looking for those magics of yesteryear, having the same smell of those years. Or there are those who have taken the "new editions," whether they be maxi or mini matters little. They may be colder, they may not have the aroma of the 80s stuck to the keys, but by god, they serve perfectly to preserve, preserve and pass on. Best of all, there are abnormal online databases containing virtually every type of game that has ever existed on the market. Thanks to this immense collection of titles, there are those who modify everything to make it backwards compatible with as many emulators as possible and those who simply do it using a laptop. But at the end of it all it is we, human beings belonging to this living network, who keep everything alive.

Biker's Thoughts

Software houses are the primary culprits in this situation. Who knows if in hindsight, knowing of this risk, they would have made the same decisions at the time. We can never know. The really important thing is that we humans who are part of this parallel society made of bits and pixels never stop believing. We thank every day people like Dumpclub64 or Newsstand 8 bits for the immense work of dumping and preserving cassettes and floppies destined to be lost forever. It would be humanly impossible to reprint all that material, but to have saved it is already so much. Thanks to the sites that have created endless databases of past games over the years. As mentioned earlier, the uniqueness of hardware and software has led to this situation, and what was labeled "piracy" for years is ultimately what is saving us. Let us also thank those who are preserving the originals, each of us with our own titles and preferences. There are so many of us, if we add up everything we have at home, a real "archival museum" made by private individuals could be born. And who knows if one day software houses might not try to reissue some great classic, be it on cartridge or CD. They might be amazed at how fast certain pieces of history would go.

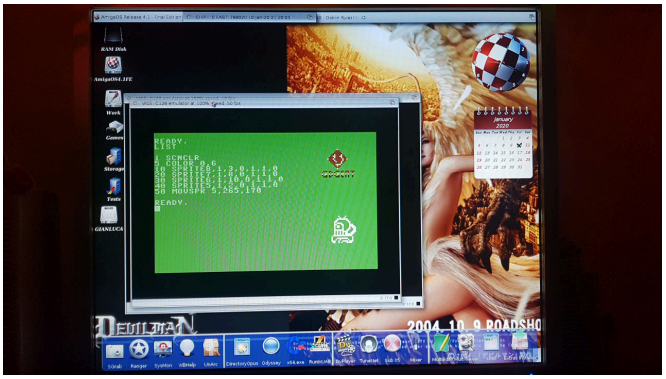
Reviving the dream

by Gianluca Girelli

This article was first published on blog.amigaguru.com in November 2022. The final part has been rewritten and adapted to reflect the changes since then.

I bought my first Amiga in 1992; it was an A2000, with a SCSI HDD and a Janux/XT board. At that time, I was about to conclude my studies and I needed a computer to prepare documents and research required for the final exams. I still had my C128, but using it for the given tasks was out of the question for many reasons. In the US the "Amiga dream" was long gone (except in the hearts of a few enthusiasts), but here in Europe things were different so, unlike all of my colleagues and schoolmates who opted for PCs or Apples, I had decided to stay loyal to Commodore and well determined to go beyond my old (but still beloved) "8-bit universe".

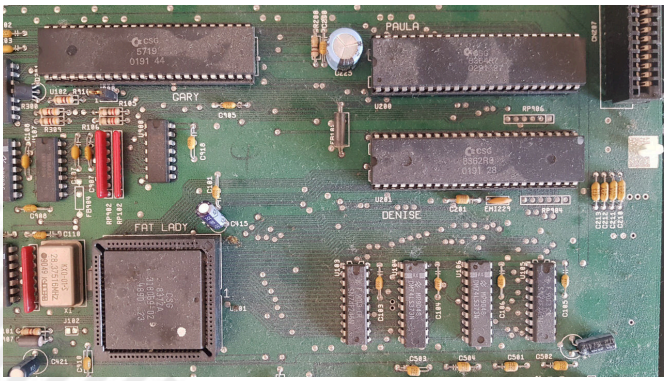
Sadly, despite my good intentions, my first "Amiga experience" didn't last long. After getting the degree, life and duties kept me away from it for so many years and, when I finally went back, next-gen boards and OSs made me opt for a brand-new Sam440 with a blazing AOS4.1 instead.

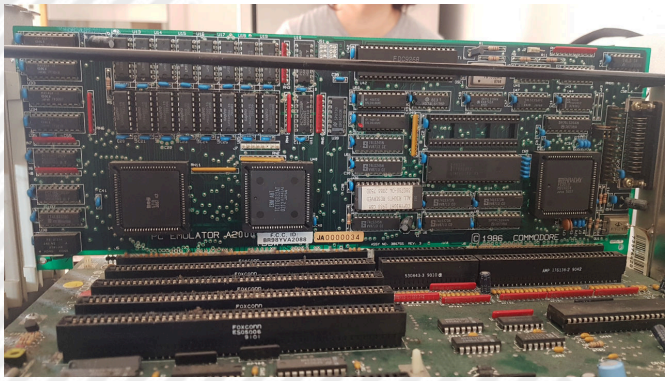


Don't get me wrong here: I like and respect all Amiga "flavors", but I felt like AOS4 suited my needs best. It was about 2008 when I started localizing software (at first) and developing games (afterward), up to the point which, partly due to the stagnating next-gen scene and mainly due to my will to "go back", I decided to retrieve my old machines and revert to the "classics".

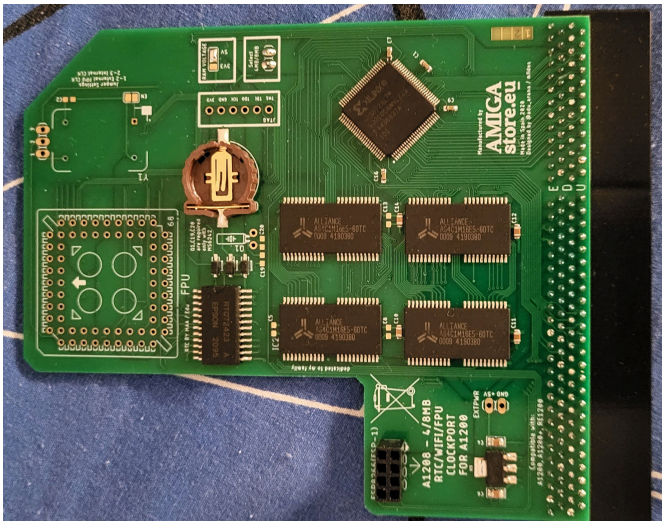
So, roughly one and a half years ago, I started to consider which of my machines should become my new playground: whether my old A2000HD or the stock, pre-owned, A1200 I previously had put my hands on via eBay. Even though I had no memories associated with it, the latter seemed a better bet since it still had a working hard disk (the SCSI one on the A2000 had jammed) and, above all, it had a faster CPU and it was small enough to be considered somewhat "portable". I dug it out of the basement, resisted the urge to turn it on, and started with a thorough cleaning and retrobrighting process. The more I cleaned the more I was hyped up so, also thanks to the awesome weather we were having in Italy, the A2000 keyboard underwent the same treatment. I was touching the sky with my finger...

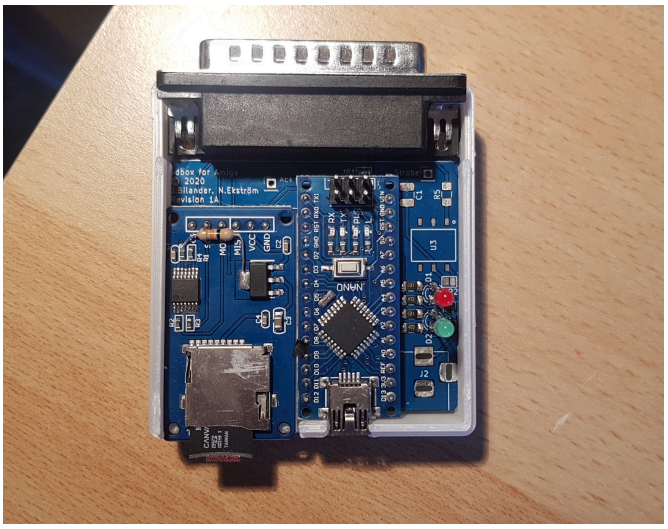
Once the cleaning process on the A1200 was completed, it was time to put it into use. It was with so much disappointment that, despite apparently starting up, what I could get was no more than a blank screen no matter which TV set I tried. Thinking back, I could have also experimented with my Philips monitor (the one that equipped the A2000HD since the early 90ies), but I was so sure the TV set had been working before that I missed that. A few hours later I was surfing the net for solutions and, since the equipment was old, I bought new capacitors and had the A1200 recapped. Also, just to make sure the problem wasn't related to failed microprocessors, I replaced the Kickstart ROMs with new ones. A good friend told me that I was trying too hard and maybe the problem was the TV cable but, again, I had memories of a working unit, so I didn't take the advice.





To relieve the stress, I also retrieved the A2000 from the basement and started working on it. The HDD was jammed and the motherboard was covered with dust, but there was no leaking or other signs of decay. I was still hyped up and even more so since a brand new 8MB fast RAM board plus an SDbox were heading my way to be mounted





on the A1200.

The first bad news arrived when the A1200 was still showing a blank screen even after recapping. Maybe it

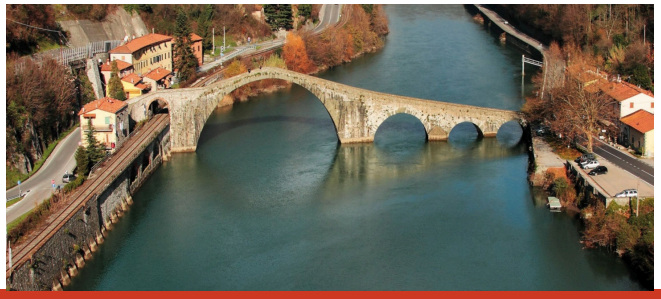
really was a problem with the cable? I was so puzzled ...

There wasn't much more I could do at that moment with the A1200, but I had a few game floppies that could help me to cheer up, so I plugged my A2000 into the socket and turned it on. I was not prepared for what happened next, since all I got were sparks from the power outlet and the electricity went out in the entire apartment. I

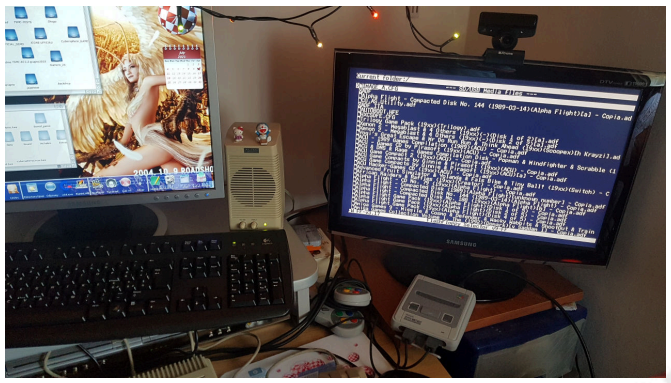
really felt my heart sinking ... what did I do to deserve this fate?

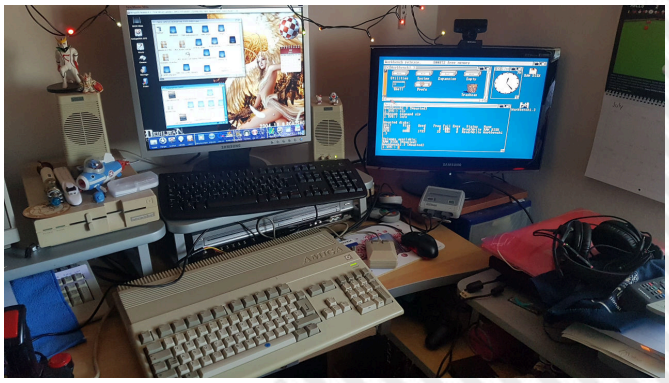
The next few hours were miserable, despite friends reminding me that you can't kill the Amiga. A solution would have been found, sooner or later, yet my proposal the get back to classics was at stake. I was afraid that the longer I postponed the start of this new endeavor, the most difficult it would have been. Summer was ending and, with it, the little spare time I got.

I have never been a fan of social media (especially Facebook) but that night I browsed its "marketplace". Imagine my surprise when my eyes fell on a page saying an A500, sporting a memory expansion and Gotek board, was available just 60km away. The price was fair as well. I got in touch with the guy the next day. On the phone he greeted me with something like "May Gary, Paula and Denise be with you" and we agreed to meet the following



weekend. He lives in Tuscany hills, and the drive to reach his place was one of the most pleasant of the last years. You can here enjoy a glimpse of the "Devil's bridge" in Borgo a Mozzano, near the city of Lucca, dating back to one thousand years ago.





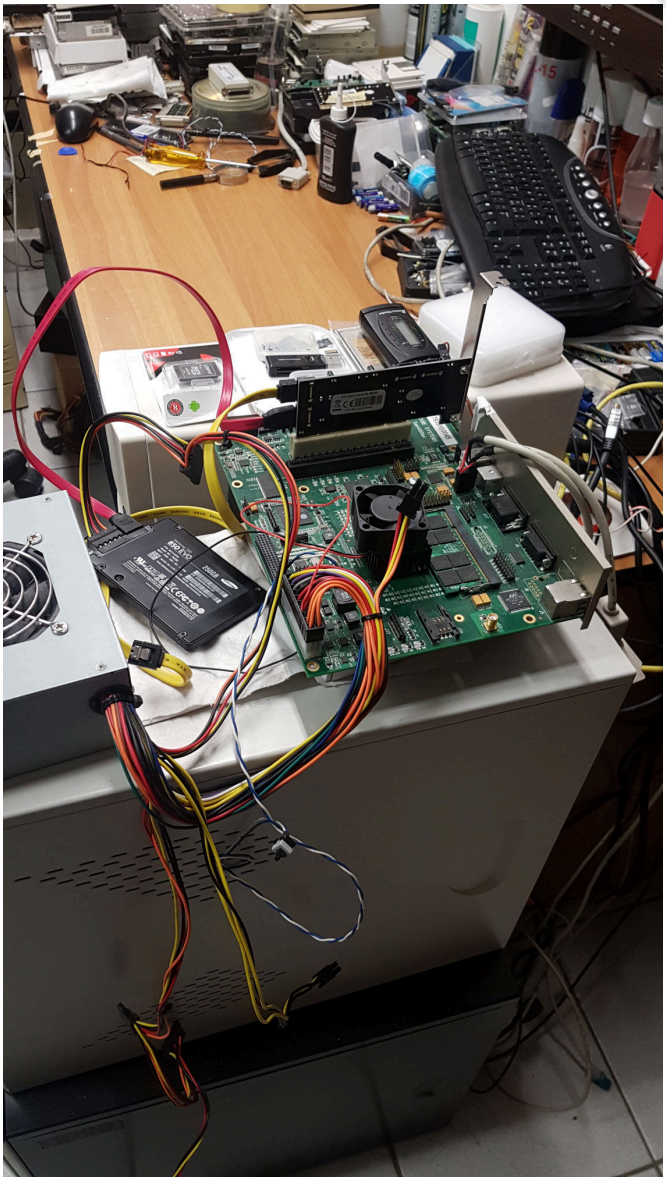
When I reached my destination the A500 was waiting for me. We tested it and had a nice little chat about old and

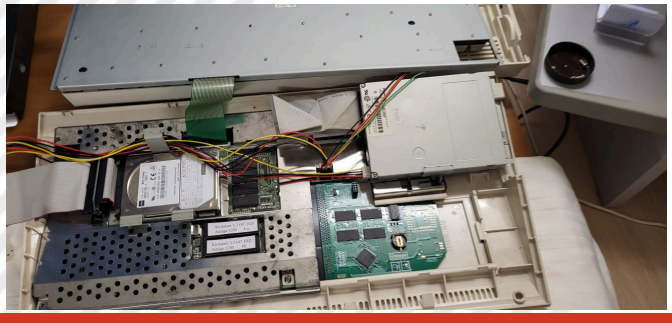
new things. When we finally parted, a new bond was tied: Amiga never fails! I drove back home with a lighter heart, and a couple of hours later I was testing the A500 in my studio. Death is only the beginning!

It was now time to heal those two injured soldiers, so I headed to Bassano del Grappa, near Vicenza, to visit Enrico at Acube Systems.

Without even talking, the very first thing Enrico did was connect the A1200 to a monitor using a different cable. The computer booted up right away showing an elegant 3.1 environment. My worries were gone in a second, and that was good, but I also never felt so stupid in my life. Why didn't I try that option myself before?

The next few hours went by in what seemed minutes and, during that time, the A1200 underwent the following





treatments: brand-new Kickstart 3.2 ROMs were installed; split cables for data and power line were added to the motherboard in order to connect an external IDE CD-ROM driver; AOS3.2 was installed; missing floppy drive mounting bracket was installed; general conditions of the system were checked. Also, the A2000 was disassembled and inspected. The motherboard looked ok, but Enrico needed time to test the power supply so restoration was postponed to another time.

A few days later, he got back to me saying the PSU was just fine, so the sparks I had seen at my place, with the resulting black-out, must have had a different origin. Just to make sure and to avoid further problems, I reached out to the offending power cord and threw it in the garbage bin. In the end, the motherboard was fine as well, so we also upgraded the A2000 with new ROMs and new AOS.

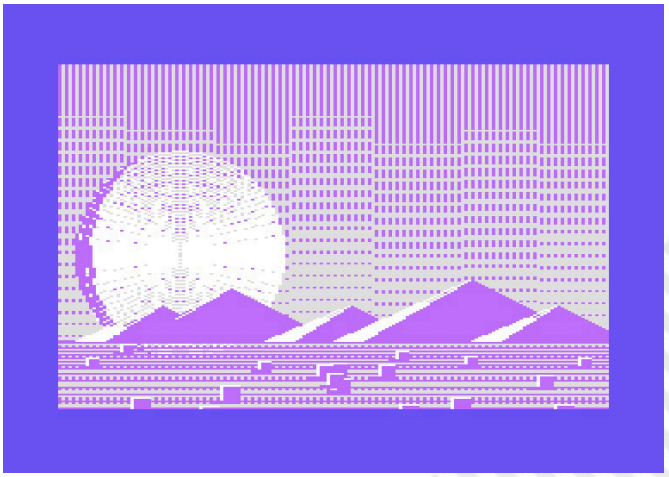
As said, the SCSI driver was long gone, but its controller board was still equipped with an additional 2MB of RAM, so we put it back in the case. Finally, with the contribution of the guys at Retro Giovedì (Retro Thursday), an IDE-LAN Zorro2 interface was added. Even the A2000HD was now alive and kicking!

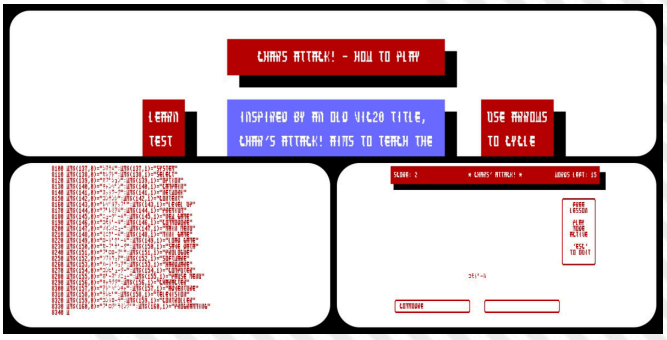
One must think the end of the story is approaching, but this is not the case. Once home I obviously started tinkering with the systems: the A2000HD, being slower and with less memory, was going to be a gaming machine (at least for the time being), whilst the A1200 was about to become my new development gear. PPaint (regularly acquired from Cloanto with the AmigaForever suite) and AMOS Professional were installed and, with that, the first timid experiments were initiated. There was also time for gaming on both systems, as you may notice…

Soon after, though, a series of different misbehavior occurred on the A1200, ranging from a complete freeze of the machine (not a Guru Meditation error, but a proper and total freeze) to sudden loss of TV signal and consequent black screen, only recoverable after a reboot. While the signal problem was scary but happening just from time to time, the freeze was constantly manifesting, thus preventing any real attempt at developing. There was a possibility that these problems were related to an unreliable power supply, so I bought a tester and recorded the outputs. As you can see in the picture, despite not having perfect Voltage outputs the A500 PSU had better performance than the A1200 one. I then switched the PSUs but, since the problems did not stop, I ended up buying a brand-new one.

Sadly, despite the new hardware, freeze events kept occurring, so the focus was shifted to the RAM expansion. I bought most of my new hardware (and, specifically, the 8MB expansion) from the guys at Amigastore, very professional and dedicated Amigans, so I deemed it unlikely for the problem to be the board itself. Yet, after removing it I didn't experience any other freeze, while the video output was still giving problems, even though rather rarely. Of course, an A1200 stock unit is not very useful as a dev machine: AMOS started but with an error ("out of memory: cannot open menus"), while PPaint wouldn't even run. I was biting the dust again.

You can't kill the Amiga, they say, but they often forget





to tell you that sometimes it can still be a pain where the sun doesn't shine, so I decided to ease it off with something else: my loyal and truly beloved C128. Taking inspiration from an artist who likes to work with old Acorn computers (BBC, mostly), I took some time off to develop a simple program able to draw code-generated landscapes.

My art is not as refined as I would like it to be, but still, I managed to achieve some decent results, IMHO. In addition, I developed a free educational software for learning the Katakana alphabet while having fun, which was featured in a recent issue of PPA (Press Play Again), our aperiodic add-on featuring games and utilities.

In the meantime, I kept tinkering with the expansion board in order to polish the contacts, a matter often reported to be the main cause of misbehavior, and, although still far from perfection, it looks like my efforts paid off since the A1200 no longer freezes (please knock on wood, keep your fingers crossed or do any other black magic you are aware of to prevent it from happening again).

It has been a few months since I wrote this article and over time things have changed. After solving the power and video connection problems, the "freezes" turned out to be a consequence of the FastRAM expansion. The reason is still unknown to me. Fortunately, and totally unexpectedly, I managed to get my hands on a Blizzard accelerator card with 32MB of RAM expansion, definitely more than enough for my purposes. In the meantime, I also bought an accelerator card for the 2000, and therefore both systems can now be used with ease as possible development platforms, making the due differences between the OCS architecture of the 2000 and the AGA architecture of the 1200. From the guys at RetroGiovedì I also bought a WAFFLE, a splendid peripheral to extract disk images in ADF format from old Amiga floppies to use them on emulators and vice versa. As Mr. Dave Haynie use to say: "Death is only the beginning."

I wish to thank all the friends out there who provided support in terms of equipment, expertise and/or simple advice. Even though I couldn't quote all, you know who you are. Long live the Amiga!

All pictures (except bridges), drawings, and story by g0blin.

Happy birthday, DumpClub 64!

by Mic the Biker Novarina

On July 1, 2018, DumpClub64 was born. A group that has been able to create a large following of fans over the years. A group that now boasts absolute level dumping and prestigious collaborations. Let us look back together, between memories and flashbacks, on these first 5 years together.

All the good stuff you have in your hands here is the brainchild of the good Roberto Lanciotti. The mastermind has clear ideas about what to do, a single as noble purpose: "The DumpClub64 aims to preserve, catalog and finally share for free all the software for the Commodore 64. We preserve games, applications, demos, everything that the Italian and international scene offers."

If it seems little to you, you probably have no idea of the amount of games and material in general released for this great little cookie-cutter gem that still today never ceases to amaze us. As much as the big titles, the ones from the big software houses, were never in danger of being lost, but all that flood of cassettes that punctually made us dream at the newsstand? The risk was definitely real.

Terrestrial and extra issues

There is a little blurb in the DumpClub64 website that I love, which explains with a smile the problem that was being faced: "Unfortunately, time, oblivion, and the earth's magnetic field are the main causes why so many applications and games are in danger of disappearing forever from our memory." Never were the words so true. It was the fabulous eighties when we fans, now all abundantly old, dreamed of the release of the new of the "Magnificent Five," later to become the "Magnificent Seven." Or the more serious Jackson volumes, passing by "Special Playgames."

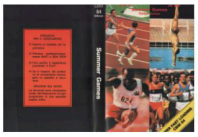
But these more popular series were only the tip of the iceberg. At that time, one could find decidedly more homegrown but content-rich releases. Collections that were in danger of being lost forever.

July 1, a few months later

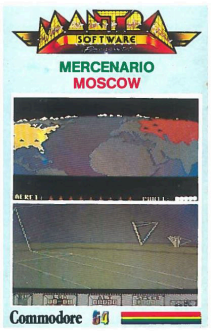
It was a gray winter day and I was shuffling through a thousand jobs in the office. I was waiting for my lunch break to get in there and fix some articles I was writing for Commodoreblog. I'm not sure why, but at some point I digressed to Facebook and the page of this DumpClub64 appears, absolutely by chance. I saw that it covered games from the legendary and unique Commodore 64, but

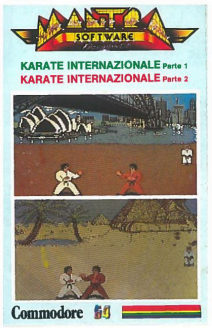
2B 001 FLYER FOX – JINN GENIE

2B 002 FIGHTER PILOT-SUICIDE EXPRESS



2B 003 SUMMER GAMES





absolutely niche stuff.

I didn't hesitate, I went to Messanger and wrote a message. I didn't know who would read it and if they would ever reply to me, but shortly afterwards I got Roberto's reply. A dense exchange of messages began, and then we left each other's phone numbers. A world had opened up to me that I had forgotten or sometimes never known: cassettes and necklaces I had never seen before.

I downloaded, thanks to them, cassettes with games I had never seen before, some of which ended up in articles written by me. After all, you can find thousands of titles on this fantastic site, so a lifetime would perhaps not be enough to see them all. A real gem are the dumps of Armati Games, Mario Arioti's creature devoted to "legalized piracy" at the time. In time Armati also became a solid base for publishing titles by Genias, Fabbri Editore and Mastertronic.

In the same style you will find the games of Mantra Software, a Brescian Software House, which managed, by changing the graphics of the covers and of course the title, to brutally propose the copy of emblazoned games. In some cases the changes were still very intuitive, such as "International Karate" instead of the legendary "International Karate."

And among the various and perhaps lesser-known Software Houses, you will have the honor of having on your hands such national giants as Genias and Simulmondo, two world-renowned names to be absolutely proud of. Go browse the drop-down menu on the site, a world will open up to you. And if you are curious about the very first session of Dumping, click HERE (https://www.dumpclub64.it/dumping/1dumping/).

The clock is ticking

Years go by and the quality of DumpClub64 grows day by day. Their work is so level-headed that it is inevitable that their skill will be recognized at all levels. And it is only by doing things right that satisfaction at higher and higher levels is achieved.

And here comes the well-deserved space in the special "Press Play Again," the virtual issue of Retromagazine. Indeed, we see that, starting with the 5th issue, this fantastic attachment will be handled exclusively by DumpClub64.

I think this is the finest recognition that could have been reserved for them, because this virtual file is truly what is closest today to the legendary and mythical cassette releases we used to find at the newsstand. An ancient world that returns today, so that the dream does not stop.

Biker's Thoughts

Passions, the real ones, unite. Somehow, which I cannot explain, in life one will end up finding and knowing people who feed on these passions and, as in this case, make them public to all. My mantra has always been "Preserve, share, pass on," so a beautiful relationship between yours truly and DumpClub64 could only be born.

It is an honor to be able, when I have time, to be a part of this with some articles. Unfortunately, days are always made up of 24 hours, and now it would be a dream to be able to have those 15 years and all that free time to be able to cultivate these passions to the fullest. Happy Birthday DumpClub64, may the magic of Commodore 64 always be with you.

NEW GAME

LEMMINGS

Year: 2023
Editor/Developer: Psygnosis – TCFS/Csabo/Unreal
Genre: Puzzle game
Platform: Plus/4
Website: https://plus4world.powweb.com/software/Lemmings

In 1991 Psygnosis/DMA on the Amiga did bingo with a groundbreaking and highly entertaining title, Lemmings. A title so entertaining that it deserves a long and enduring saga.

Over these 30 years, the title of the cute suicidal rodents has been converted for virtually every system in existence.

Only one system was missing from the list, but thanks to Tamas Sasvari and Csaba Kemeri, the Commodore Plus/4 also received its port from the code the two developers had started back in 1993.

An early embryonic version was presented at the 1993 Debrecen demoscene party, but unfortunately it was abandoned after several memory problems. Tamas had used a buffering system for the bitmap approach, which as development progressed encountered quite a few memory problems that they could not solve. At least until now.

The title was released on July 17, 2023 at the Arok 2023 demoscene and is complete.

At this point we just have to say-what is Lemmings like on Plus/4?
Well done, not very fast but certainly very accurate.

The graphics are detailed and move reasonably well (with some slowdowns at times of on-screen "crush"). I must admit that I found the version more enjoyable than the same on C64.

The water animation in level 4 is amazing. The palette is definitely exploited tremendously. Even the resolution is better than that on C64.
On Plus/4 we have no sprites and no SID, but no problem! It works fine.
The TED does not make the original audio regret and performs excellently.

We are facing an impressive effort that deserves to be played.
The game spirit and longevity are the same as always.
Another good one on Plus/4.

by Giampaolo Moraschi

OUR FINAL SCORE

» Gameplay 95%
It's Lemmings: beautiful, crazy, fun and perfectly playable even on the little Plus/4.

» Longevity 95%
Password system as always. Well-crafted levels. Do I need to add more?

NEW GAME

E.X.O.

Year: 2023
Editor/Developer: Muddy Vision
Genre: Shoot em up
Platform: Atari 7800
Website: https://forums.atariage.com/topic/352692-exo-digital-edition-available-to-order

It has been a long wait for E.X.O, but it has arrived as a digital download.

The reason for taking so long to be released lies in the difficulty of making the game on cartridge.

Its size far exceeds the space of a classic cartridge for the 7800, and this put the developers off making it by no small margin.

A digital download finally came out, and I must say that even though it has been a long time, it is a good look. It is an adventure/maze game with classic shoot em up elements. The spaceship reminds me a lot of the one in cybernoid.

If I am honest, the game itself is reminiscent of Cybernoid, but with less "shooter" and more reflective moments.

There are five worlds to traverse, beautiful ones filled with deadly dangers, monsters and traps of all kinds.

Each world is about 22-25 screens long and is definitely a level but extremely rewarding challenge.
EXO is a rare example of love for gaming, gameplay, and the Atari 7800.

I love that slight hint of gravity as well as I love the trap settings in the levels.

To this love we add lush graphics rich in detail and animation, smooth animations, and a compartment are of excellence.
Here it is not love but an eternal marriage.

What more to say!
It is worth buying and playing it in any way possible.
Emulation or real (via cartridge with sd) your choice.

by **Carlo Nithaiah Del Mar Pirazzini**

OUR FINAL SCORE

» Gameplay 92%
Responsive and simple controls combined with first-rate level design.

» Longevity 95%
EXO wants to be played and is challenging... but it gives a lot of satisfaction.

NEW GAME

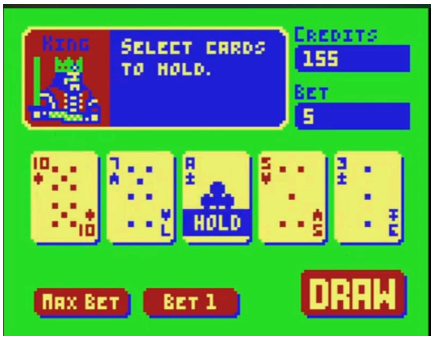
VIDEO POKER: MC-10 EDITION

Year: 2023
Editor/Developer: Shoemaker's Last Software
Genre: Card Game
Platform: Trs-80 MC-10
Website: https://pshoemaker70.itch.io/video-poker

A classic poker game on one of the classic home computers in computer history, the TRS-80 in MC-10 version.

The game is a well-executed simulation of Jacks or Better, a solitaire version of the classic poker game that involves drawing 5 cards from a deck of 52, with the possibility of substituting one or more of them only once, with the goal of obtaining one or more 5-card poker hands containing a winning combination.

The player gets a winning combination in the following cases:
- Pair when a pair of J, Q, K or A appears among the five cards in the hand
- Double pair when two separate pairs appear among the five cards in the hand
- Three of a kind if the player has three cards of the same value in his hand
- Straight five cards of consecutive value, but not of the same suit
- Flush any five cards of the same suit, but not of consecutive value
- Full a combination of a Three and a Pair
- Poker four cards of the same value
- Straight flush five cards of consecutive value and of the same suit,
- Royal Flush which is obtained with an Ace, a King, a Queen, a Jack and a 10 all of the same suit



The title is made 100% in machine code and runs on TRS 80 MC-10 with at least 16k memory.
The game uses a causal number generation routine.
The artwork is well done and clear thanks to the contribution of Michael Myers (not the serial killer in horror movies!) well-known pixel art artist.

Sound almost absent except for some in-game effects.
What more to say. YES is a card game and has a strong appeal to fans of the genre.
It is well crafted but can be tiring in the long run.
Dedicated to all enthusiasts.

by Giampaolo Moraschi

OUR FINAL SCORE

» Gameplay 70%
Simple and well explained in the initial tutorial.

» Longevity 60%
Game suitable for fans of the genre.

NEW GAME

ABSOLUTE 0

Year: 2023
Editor/Developer: GUS Entertainment
Genre: Platform/Puzzle
Platform: Amiga
Website: https://demozoo.org/productions/325745/

Corben didn't want to go there. He wanted to do something else with his life--exploring forests, tropical seas, ancient lost temples maybe rescuing the pretty girl on duty--but instead....

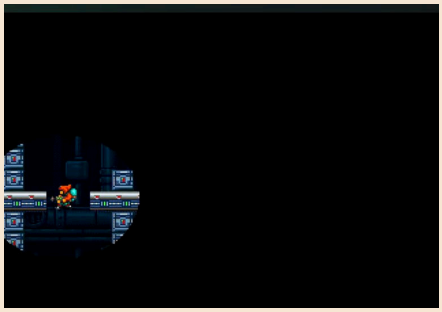
Here he is, in the absolute cold, dressed as in the worst winter nightmare cleaning up a destroying thermal reactor. He will have to search for batteries and reactivate the climate reactors, unleashing the elements and restoring balance before the ice age.
No Mojito...no Spritz...sun, beach and heat.
Whatever, we are increasingly convinced that being an explorer in video games is a rip-off.

Absolute 0 is the new platformer with puzzle elements from GUS Entertainment, developed for the POSADAS 2023 Hombrew games competition, an event that gives away really interesting productions every year.

The game is a classic platformer with elements of logical reasoning. Searching for reactor parts is no child's play, and we will need to squeeze our brains to make the best use of our equipment.

A series of objects that allow us to create or destroy blocks of ice useful for reaching certain positions in the level.

The same equipment allows us to eliminate enemies by shooting (just picking up weapons) and much more. The title has been localized into several languages (Italian, English, Spanish, French, Portuguese and German). A sign of caring for gamers around the globe.



The title is pleasant and playable. After a very brief tutorial on how to move around inside the reactor, we are catapulted into the game faced levels. The difficulty is calibrated very

well and allows the player to learn the controls with ease.
I found the character's jumping woody but I think that is simply personal taste, while the use of our equipment is simple and you get used to it quickly.
Carefully crafted but perhaps a bit monotonous in colors and settings. Nice character and enemy animations.

It runs excellently on Amiga and does not require much configuration.
The downloaded title is in lha format, it should be unzipped in the folder and then run in the workbench.
It will also be released in Adf format shortly.

Sore notes.
Monotony and music.
In the former case, the levels are interesting but in the long run the mechanics become repetitive, while the music, while well done, I found it unbearable (but that's personal taste).

by **Giampaolo Moraschi**

OUR FINAL SCORE

» Gameplay 85%
Localized in several languages, good tutorial and simple mechanics. The mechanics in jumps should be reviewed.

» Longevity 70%
Becomes repetitive in the long run.

NEW GAME

VYRZON

Year: 2023
Editor/Developer: Minsoft
Genre: Shoot em up
Platform: Vectrex
Website: https://minsoft-games.myshopify.com/

A Vectrex cartridge in 2023? Manufactured with care? And is it even a great game?
The answers are all three yes!

Vyrzon is a good game. A fun and knowledgeably developed title for the "mysterious" Vectrex console, a forbidden dream of so many of us in the early 1980s.
It is a shoot em up that recalls the models of the past.

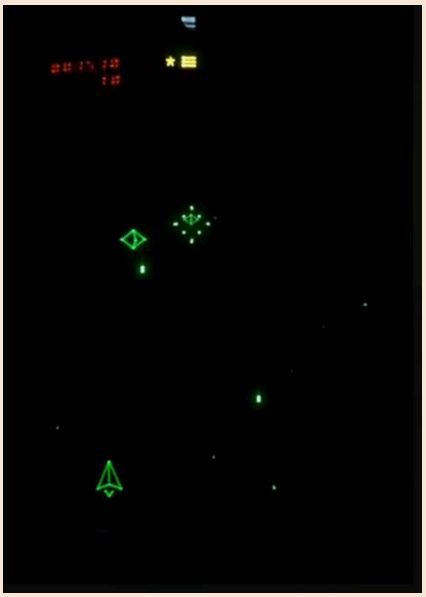
There is a lot of Space Invaders but with end-of-world boss fights and with several mechanics implemented from other titles.
There is a lot of code and programming work that makes the title smooth and fun.

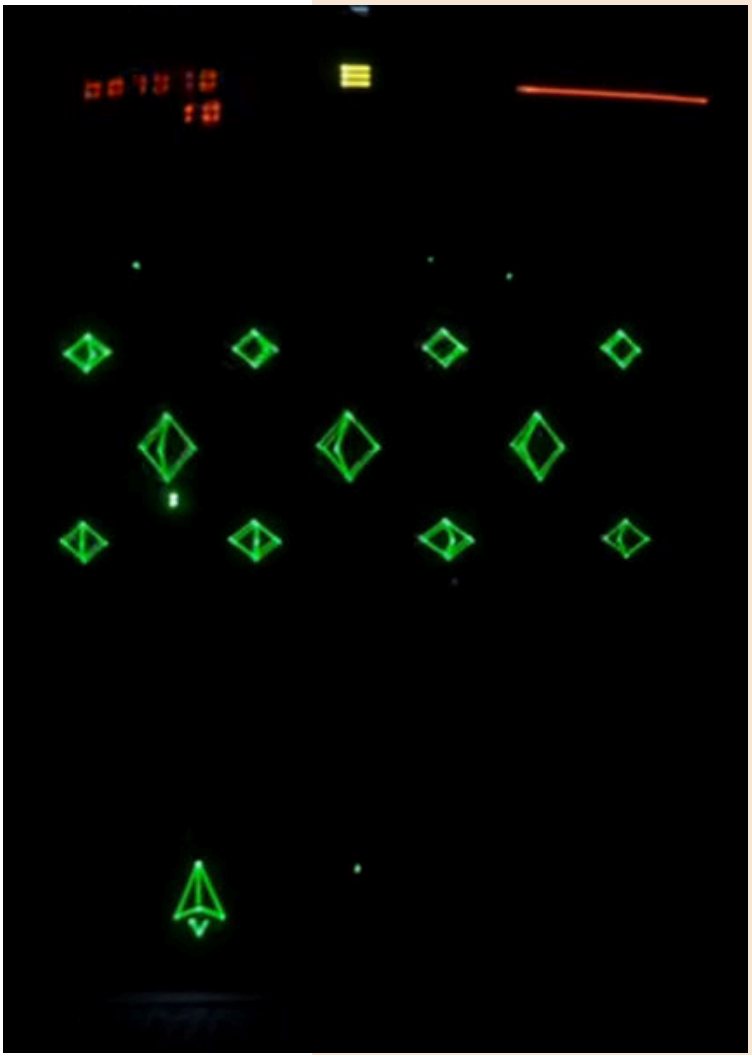
The beautiful packaging that contains the game tells us the following "Face the greatest threat to the universe since the beginning of time..." Stuff we old video gamers have heard and faced long ago. But we are men and not corporals, so let's grab our pad and throw ourselves headlong into this vector universe.

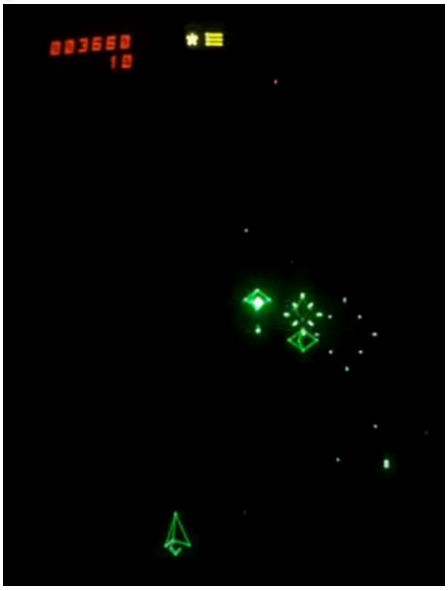
In short, they promise us 128 waves of angry black enemies and no less than 8 asteroid belts to avoid--we have been facing any slimy, gross monster for years and this challenge cannot be missed.
As I said, the packaging is very nice and solid. Nice cover artwork and the inside looks solid.
There is also a black and white game manual along with the black cartridge with the logo sticker.

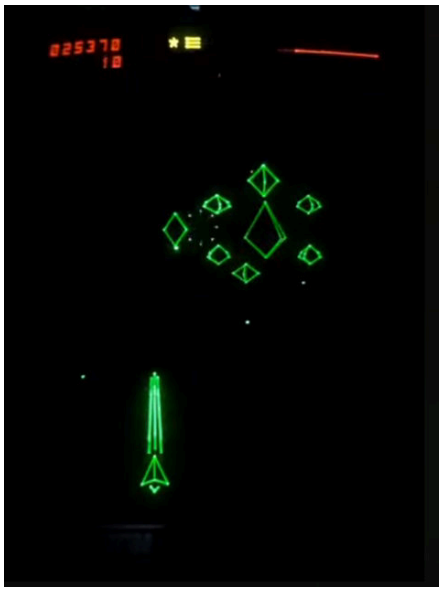
The manual tells us everything. How the on-screen bars work, the buttons on the pad, and a bit of history. All nicely laid out and with a really "80s" feel.

We are also shown the enemies we are going to fight, and we are spoiled for choice. From classic flying saucers









to the more troublesome warlike-looking pyramidal objects.
Forgot! There is also a beautiful overlay to "attach" to our Vectrex. Beautiful indeed!

Turning on the console we are faced with the game title shining toward us. We press the button to play and are catapulted into the first wave.
The overlay does its job combined with clean, fast and fluid graphics with incredible three-dimensional effects.

The game is an old-school shoot'em up. It is no picnic and requires a lot of manual dexterity.
I must admit that some waves are really tough.

In short, if you have a Vectrex and want to play something new, well-made and fun Vyrzon is for you.

Only note-the cost!

The title costs on the shop 70 pounds. A price that is certainly not friendly. But for your Vectrex you don't do this madness?

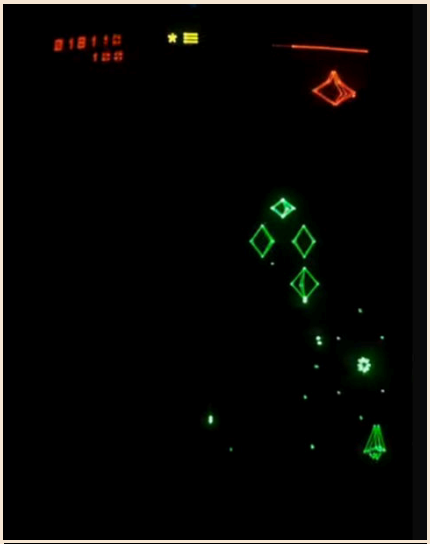
by **Carlo Nithaiah Del Mar Pirazzini**

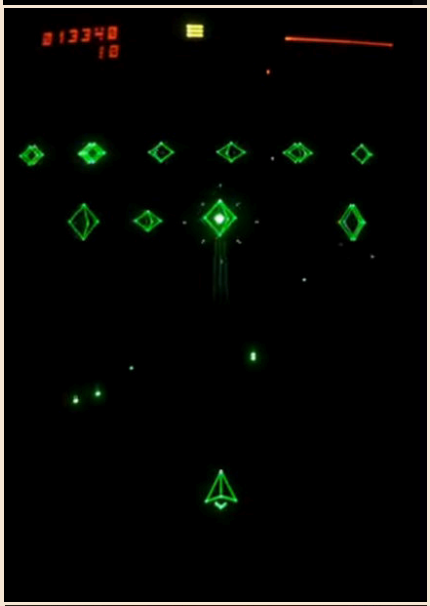
Thanks to Andrea La Manna for providing the Vectrex and cartridge.

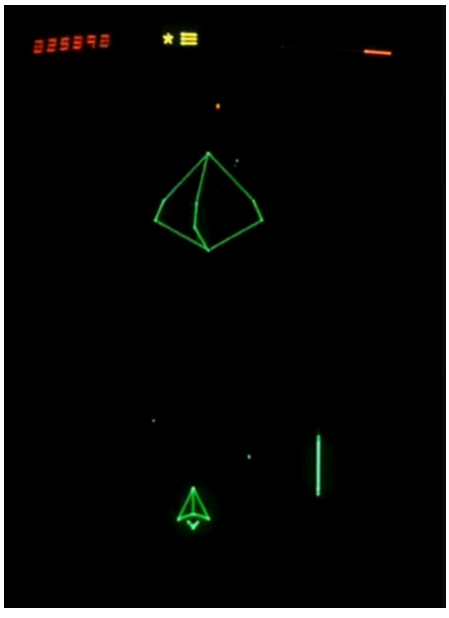
OUR FINAL SCORE

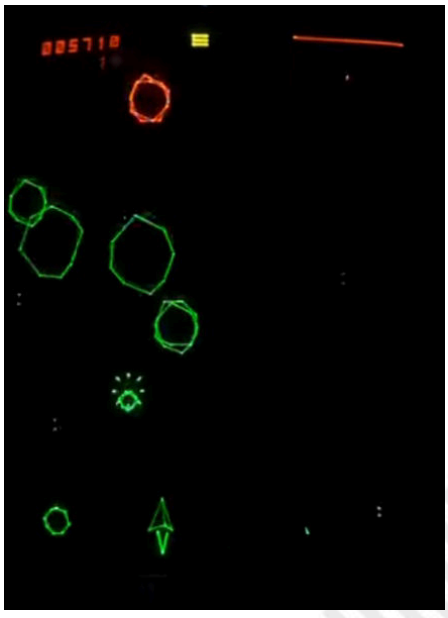
» Gameplay 90%
Well-structured waves with increasing difficulty. Excellent game controls. All topped off with really first-rate packaging.

» Longevity 90%
I was glued to the pad for several nights. Most enjoyable.









NEW GAME

MEGA MAN: THE SEQUEL WARS EPISODE RED

Year: 2023
Editor/Developer: Woodfrog
Genre: Platform Game
Platform: Sega Megadrive
Website: https://woodfrog.itch.io/mega-man-the-sequel-wars-episode-red

Mega Man: The Sequel Wars is a remake made by fans of Capcom's robot/human saga and to be precise episodes 4,5 and 6 that originated on Nintendo NES. It aims to recreate the original titles with extreme care but with a 16-bit graphical style and a new soundtrack.

This title was divided into two episodes, and today we are talking about "Episode red," which you can download for free from the link we put in the description.

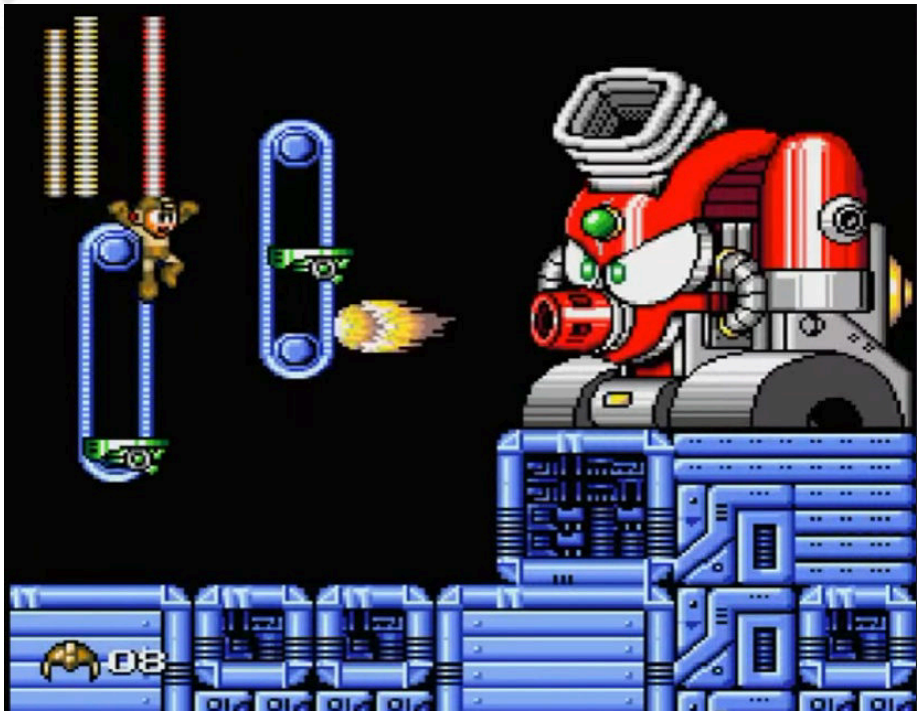
Everyone will be familiar with the Megaman saga, in this game we can relive the experience of titles 4, 5 and 6 by shooting down any crazy droid Dr. Wily sends at us.

The attention to detail and love poured into the whole project is impressive. The saga is notorious for being very punishing if not approached in the right way.

This Megadrive version presents us with a truly remarkable graphical enrichment.
Detailed, colorful, with excellent shadow and light effects and lots of animations.

I have been playing this title for a long time these nights. Sleeping little due to extreme causes (I am one of the flooded people of Romagna) and it has enthralled me.

I needed to entertain myself. I must say that this product is one of the finest homebrews I have ever played!



improves game controls and allows for a smoother, cleaner approach.

This episode red contains only episode 4, and episode 5 and 6 will also be released soon.

If you are a lover of good gaming and Megaman and its adventures sling yourself to download it.

by **Carlo Nithaiah Del Mar Pirazzini**

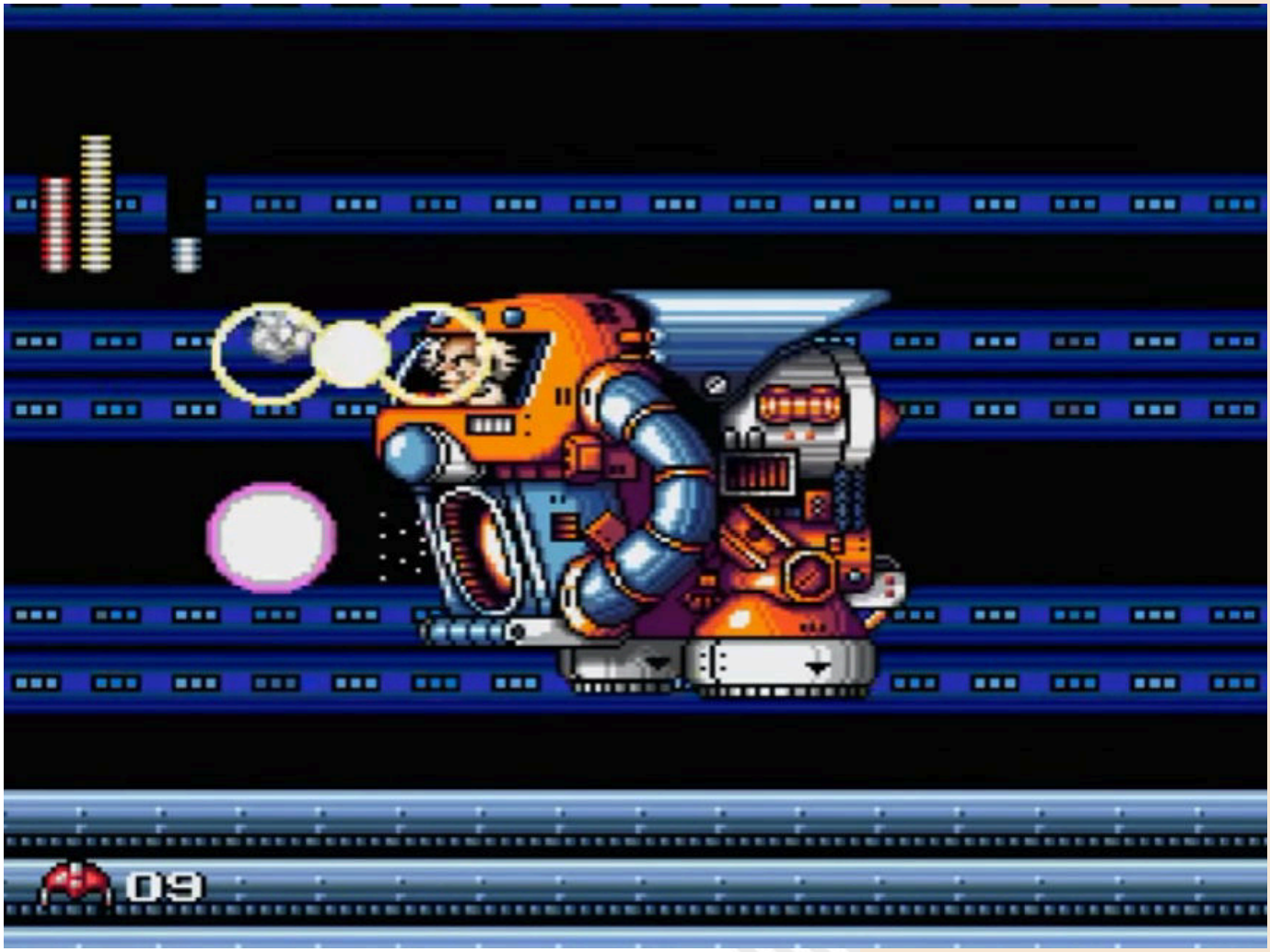
OUR FINAL SCORE

» Gameplay 90%

Packed with technical touches and details, great soundtrack, and a better control system than native titles.

» Longevity 90%

This "Episode Red" is still a Mega Man title. Difficult but addictive. Requires precision and game vision.



NEW GAME

ASTEBROS

Year: 2023
Editor/Developer: PixelHeart – Neofid Studios
Genre: Action/Rpg
Platform: Sega Megadrive-Pc-Nintendo Switch
Website: https://neofid-studios.com/ **- Steam**: https://store.steampowered.com/app/2384720/Astebros/

We live in a great time for video games! Who would have thought that in 2023 games for Sega Megadrive would still be developed in physical form for the enthusiast market!
We call it neo-retro, it's doing the new with the old or as they say...it's in the old barrels that good wine is found and this Astebros is no exception!

This is the story of a Roguelike.
Neofid Studios is an experienced team, and this is not their first attempt at it. In 2020 they gave us that little gem "Demons of Asteborg" always thought to be a title for the 16-bit Sega. Based on their success with veteran audiences, they thoughtfully launched a kickstarter to produce "Astebros" sequel-prequel to the previous title, which takes place in the same universe. In Astebros we find all the recipes for making a good old action-rpg roguelike, a mix of genres with new elements and challenges.

Speaking of challenges, we could also say it is a real climb to glory. It is a title that often demands attention and is demanding. You will often find yourself exploring the same dungeon multiple times (they are randomly generated) to search for the specific item or to free the specific character. But that is not the only thorn in your side-there is much more!

More danger, more enemies, and a demand for more attention and strategy.

The three available characters give that spicy touch to make the title even more "captivating." The wizard (wonderful), the knight and the archer, all with their specific characteristics and weapon sets, will be crucial in dealing with the game levels. A wrong choice in a given level will be fatal. It is a title reminiscent of Ninja Gaiden but mixed with the mechanics of modern titles in the genre.

Mastering the game requires patience and numerous trial games. Personally, I loved the mage for the characteristics.

OUR FINAL SCORE

» Gameplay 95%

Three different characters, randomly generated dungeons, endless items to find, power-ups, magic... would you like me to continue?

» Longevity 95%

This is a tough and difficult title, but will allow you to be played from start to finish as it once was. Lots of willpower, determination and muscle memory to meet the challenges.
A must these days.

Fast, excellent mastery of items and durable. A lethal mix in some levels, although in some levels I switched to the archer (the shooting weapons are devastating).

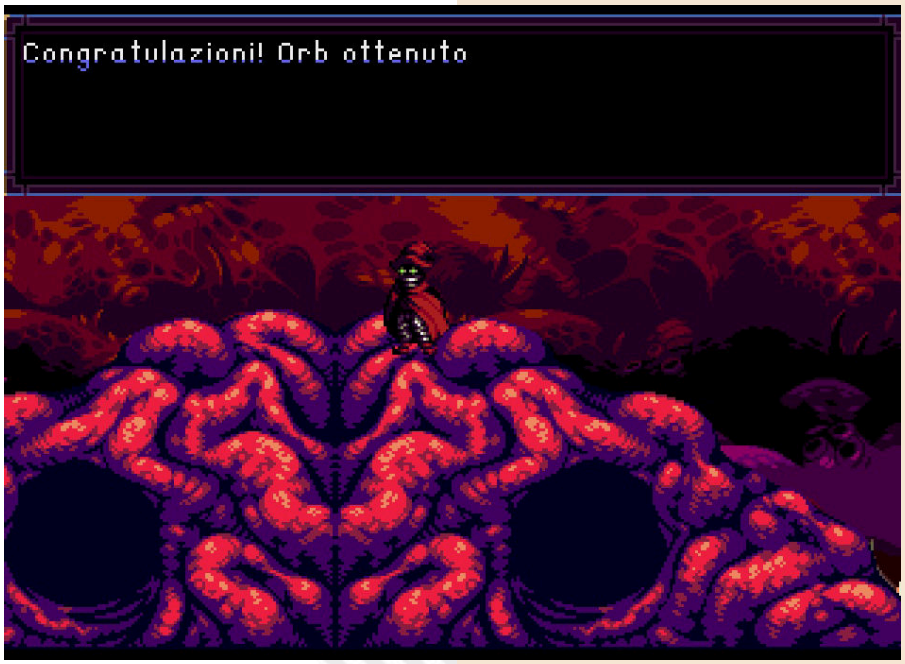
But artistically, how does this stand? It confronts us with so much wonder and variety. We can clearly see that level design was a key detail in the development of this work.

It is colorful, beautifully animated, with detailed backdrops and lots of variety. The graphics make you want to see more and more. To find out what will be on the next level or in the dungeon already visited.

All accompanied by quality sound design with a soundtrack worthy of inclusion in one's playlist on Spotify (or on the walk man if one is really "old school"). Granted, we are still far from perfection, but this is definitely a title to own in one's Megadrive library.

Astebros is the icing on the cake, the ice cube in the drink when it's hot... the slice of Lemon in the Crown... In short, it's an amazing game that deserves to stand alongside Castelvania and the like in one's collection.

by **Carlo Nithaiah Del Mar Pirazzini**



NEW GAME

COSMOS CHRONICLES
INTERNATIONAL EDITION

Year: 2023
Editor/Developer: Dottor Floyd
Genre: RPG/Adventure
Platform: Atari ST/Windows
Website: https://gamopat-studio.itch.io/cosmos-chronicles-international-edition-atari-st-windows

A beautiful dish in the kitchen is made with several elements. The recipe must be clear, perfect ingredients, and a trained staff. Cosmos Chronicles (in this case the International version) is a delicious dish that has all these elements. To this triumph of video game taste we have Dr. Floyd, a developer on the Atari ST who really shows he knows his stuff.

Create this world consisting of 200 billion galaxies, hundreds of billions of planets and stars per galaxy, the ability to visit every single thing on the screen (planet, spaceship or cosmos) and a vast open world.

He does so in 2023 on a simple Atari ST taking cues from three absolute masterpieces of the past: Ultima (in its IV and V versions), Elite and Frontier, and Sundog.

From Ultima it takes gameplay and graphical rendering (something that drove me crazy as a fan of the saga). From the Elite saga, the open world. A vast cosmos full of battles, trade and interactions with any of its inhabitants. From Sundog, on the other hand, it takes the futuristic adventure part and the many interactions in the game. Add to this the contributions of Bruce Webster, father of Sundog on Apple II and Richard Garriott (the father of Ultima) who is even present in the game in his fabulous 16x16 pixels of regal and crazy presence.

Wow. All in one file for ST.

The year of the game is 1815 of the Hegemonic era (a period of cosmic peace), and our hero lives in exile on a small satellite planet called Acriel, orbiting Nova, the capital planet of the Hegemony.

You find out that your elderly grandfather, former Lord of Hegemony over Nova, has been murdered through

treason and your family is destroyed/disappeared.

At this point our hero is destined to abandon his rustic life and devote himself to investigations to understand what happened by uncovering a terrible machination for the entire known cosmos.

The plot is very reminiscent of Star Wars in certain aspects or Herbert's Dune world, but the title is much more than just an adventure game.

The protagonist moves through a real-life environment where he will not only have to fight, run away from

difficult battles, uncover intrigue and more; but he will have to feed, wash and try to survive day by day as in a "modern-made" survival game.

It is an uncompromising game. You own one life and once you die it is over just like in real life and you will have to start over.

The developer has really thought of everything. On the itch.io page you will find a quick handbook explaining how to get around in all phases of the game.

In the ground phase it is simpler and you will move just like in Ultima. You will be able to explore and interact with any object on the map and follow the text that describes what happens with each of our choices.

There is a brief guide to the galaxy and how to use our spaceship and the distortion engine for space jumps.

Again we are faced with a realistic title that presents us with a complex set of controls to keep an eye on. Everything is limited and everything can be exhausted.

It is not a lighthearted title, it demands attention, and I really like this.

It reminded me of space exploration in Elite.

Technically it is simple. There is everything there needs to be in graphics that, as I told you, are reminiscent of the Ultima saga.

It is minimalist in sound by limiting itself to effects at the right time.

You can find the title on the itch.io page in three versions.

The first is the rom in "disk" format, the second is a hard disk version, and the third is a Windows version.

The latter is nothing but the disk version and the Hatari emulator launched through an executable, ready to be played.

The title is compatible with any Atari ST (ST, STE, MEGA ST, MEGA STE, ATARI TT AND FALCON), but the STE configuration is recommended for stability. It requires a minimum memory of 1mb and is adapted to play on a single 720kb floppy.

But in all this giant cosmos is there a black hole? Is there a somewhat indigestible ingredient in the perfect dish I described at the beginning?

Let's say it is a title for "old gamers" and fans of the genres to which it belongs. It is definitely not for lovers of more straightforward shooters or action titles.

In any case, it is a very high-level title.

by **Giampaolo Moraschi**

OUR FINAL SCORE

» Gameplay 90%

Complex but enjoyable. Varied, vast, and virtually endless.

» Longevity 90%

You die easily because it requires attention. It is a survival game with elements of role-playing and adventure. Once you get acquainted with it all you will hardly leave exploration.

NEW GAME

PELUSA SAGA: KAIJI'S TRIALS

Year: 2023
Editor/Developer: Broke Studios – Jonny Manjiro
Genre: ARPG/Roguelike
Platform: Nintendo NES
Website: https://jonnymanjiro.itch.io/pelusa-saga-kajis-trials

It is not easy to be 13 years old in the land of Lobo! Young Kaji, a young Pelusa cub (a race of fox men from this strange land) who finds himself caught up in a terrifying unforeseen event during his coming-of-age ritual, soon discovers this.

The little one just had to complete "The Hunt," a mission where four sacred objects must be retrieved: a fire wand, an ice wand, a sacred flashlight and the hunters' bow.

Before starting the mission, the Pelusa elder scatters treasures in a verdant forest, an island area, a mountain range and an ancient castle.
Having enjoyed peace for centuries, the Four Sacred Treasures had been regarded as mere relics of an ancient era, but from a sealed dark portal a horde of demonic creatures poured into the realm.

That's why Kaji finds himself in trouble. Not only must he retrieve the objects, but he must save his skin and defeat all the disgusting monsters and save the world.
In short, for a 13-year-old, it's a lot of work.

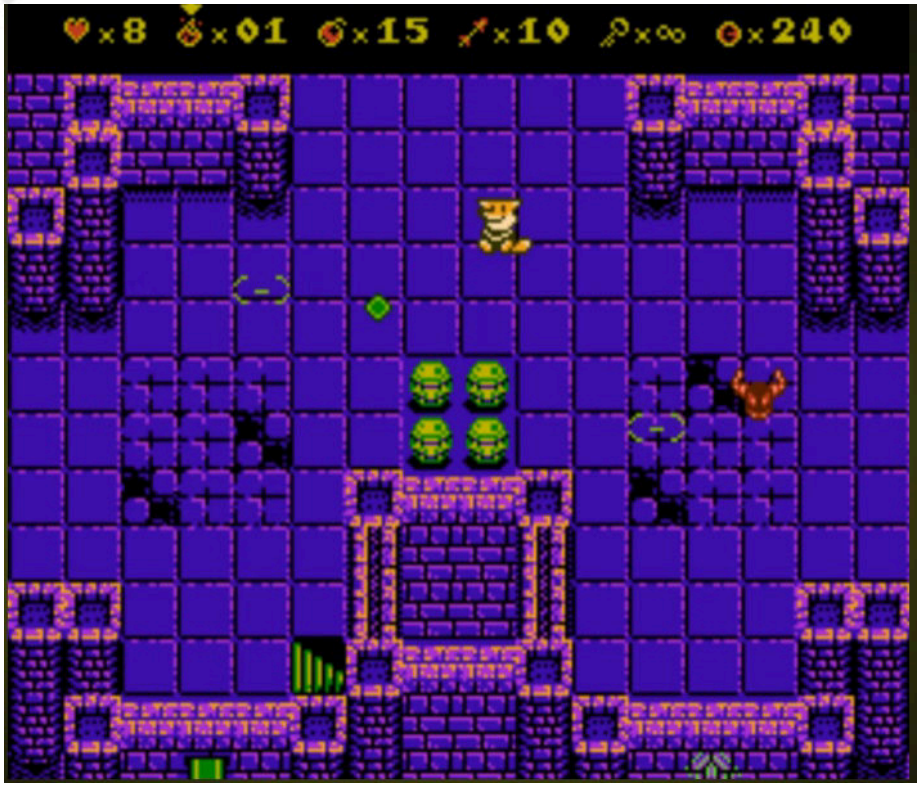
Pelusa Saga is the new arpg with roguelike elements from Broke Studio, developed by Jonny Manjiro.

It has simple controls: directional cross to move the character, B key to shoot and A key to hit opponents. The start key shows us the map and equipment.
There are over 200 missions to complete, and each time you tackle the game is never the same as the last. A huge map and so much to see and discover, juxtaposed with a high mortality rate typical of this genre of games.

As in classic role-playing games, our character during the adventure will improve his skills by gaining experience and will be able to buy new equipment thanks to coins released by monsters or chests.

The map is vast, and often, if you play without so much care, you may get lost among the moors and forests or run into areas that are totally unreachable without the proper weapon.

If you are expecting a "cute and cuddly" title, you are on the wrong



track. Pelusa Saga is a game with a high mortality rate and requires attention to complete.

Technically it is well done with good sound and graphics, perhaps not too detailed on the surface but undoubtedly effective in showing the various game elements. The look reminded me of Zelda but with a "condensed" graphical appearance nevertheless pleasing to the eye.

Despite the high rate of death present, it is a very regiuable game. Repeating levels is never boring, and the story of furry little Kaji is worth completing.

The title is available in Rom format on the developer's site, downloadable for a fee. Inside the compressed file is the Rom and a small color instruction manual.

Broke Studio, however, has also put out a physical version, the cartridge, for insertion into the NES. This version contains all those things that "physical" fans love: manual, well-made case, a solid cartridge--everything needed to fit into the game library.

Pelusa Saga is a title suitable for gamers with lots of "hair on their stomachs" and who seek level challenges. Technically well done it richly deserves a sufficiency.

by **Carlo Nithaiah Del Mar Pirazzini**

OUR FINAL SCORE

» Gameplay 80%
Simple game system and a truly amazing amount of missions.

» Longevity 80%
The difficulty level definitely veers upward, but the game is enjoyable and inviting.

NEW GAME

MEOOOW 2!

Year: 2023
Editor/Developer: PRIJEDOR
Genre: Puzzle
Platform: Atari 2600
Website: https://prijedor-x.com/meooow2.html

Max the cat is a sly one and is always hungry!

Again he wants to reach a slice of cake placed at the top of a series of shelves at all costs, but to do so he must collect all the objects that fall from above so as not to wake the masters.

If they touch the ground poor Max will lose a life and be forced to do it all over again.

Meooow 2 is a nice title. It may not be the most complex is-brain-splitting" title in the world, but it is the classic game that makes you spend a few minutes in joy.

It can be downloaded and played in emulation, inserted into a Harmony cartridge, and even purchased (with advance order) on the Atari Age website.
The title is made in BatariBasic, a language used in the creation of several Atari 2600 titles. Bb (for friends) is a compiled language, which runs on a pc, but generates a binary folder that can be read and executed on any 2600 emulator or used to make a 100% working cartridge.

It runs on Windows, macOS or Linux, and the full source code is already included in the download so it can be used.

The BatariBasic website is as follows:: https://bataribasic.com/

Returning to the game, Max the cat moves via our joystick left and right and descends or ascends stairs by pressing up or down. He must grab objects as they quickly descend from the ceiling until he reaches, without letting anything touch the ground, the coveted cake.

OUR FINAL SCORE

» Gameplay 80%
It's not the most innovative or complex title in the world, but it's fun to play and lets you replay it.

» Longevity 75%
The levels may seem few, but the increasing difficulty is really tough.

Speed increases in levels, and you will often find yourself running like crazy in order to grab everything.

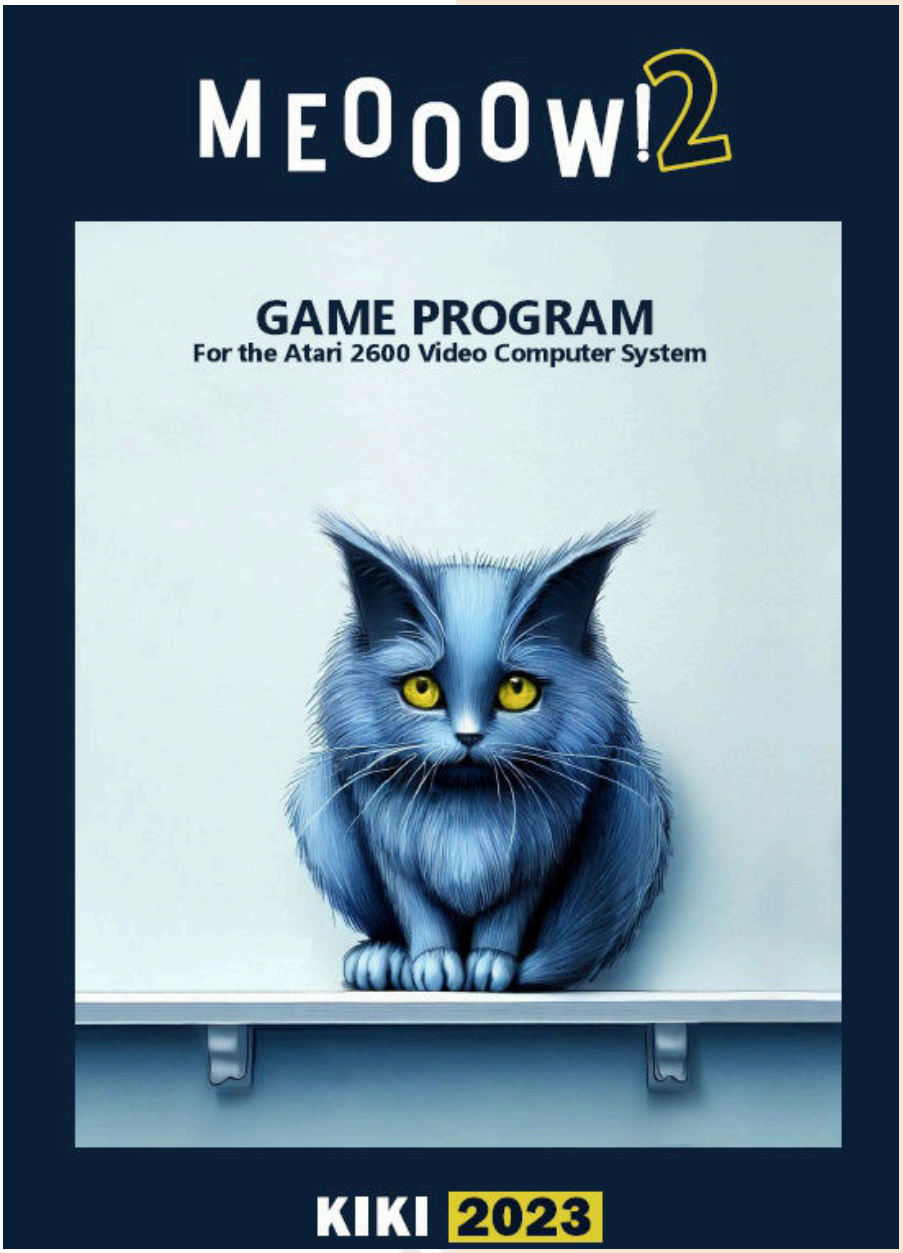
There are 4 game levels, once completed the game restarts with the increased difficulty.

It is a nice title and simple in its implementation.

Max's sprite is funny as hell, and in general the title is funny.

I recommend it to anyone looking for something quick to play every now and then.
Nice!

by **Carlo Nithaiah Del Mar Pirazzini**



NEW GAME

NIGHT/SHIFT

A CYPHERPUNK ADVENTURE

Year: 2023
Editor/Developer: Ecletic Imaginations
Genre: Avventura grafica
Platform: Amiga AGA
Website: https://www.nightshift.cx/

2039, City of Boston. Three young citizens uncover the greatest conspiracy of their time.
A dystopian world in pure cyberpunk style with neo-retro atmospheres made in Ham8 on Commodore Amiga. This is Night/Shift a Cypherpunk Adventure (the title is deliberately wrong).

The Hold And Modify graphics mode (known as HAM) allows all available colors per chipset to be displayed. On OCS and ECS chipsets it displays all 4096 colors on screen using only 6bit per pixel instead of the required 12 bits. HAM works on sequences of pixels in the same line.
In AGA chipsets it takes the name HAM8 because of its ability to display 262144 colors simultaneously.

HAM can be viewed as a lossy data compression technique, where 12/! 8 bits of color information are stored in 6/8 bits of memory and are decompressed via hardware in real time as the video memory is read and displayed by the graphics processor.

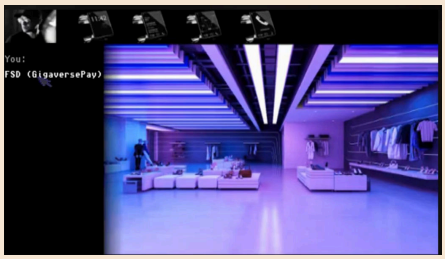
When this mode was launched in 1985 (with the launch of the Amiga), it was an advantage over competing systems in that it allowed digitized photos and some 3d rendered images to be displayed at an incredible level for the period.

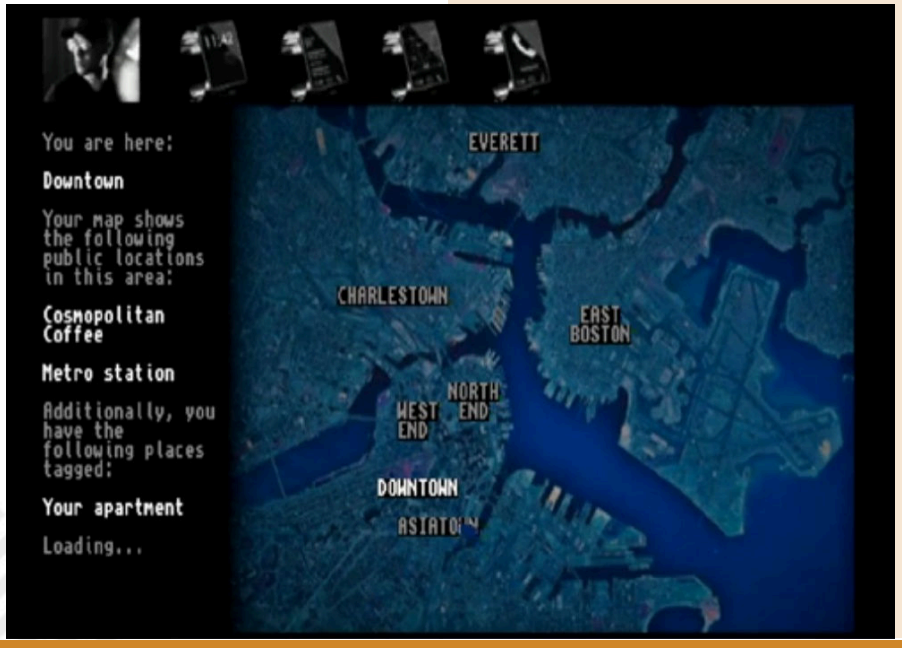
HAM mode is only an approximation of truecolor. It can take up to three pixels to switch from one color to another, so that in viewing sudden changes in color often found in digitized photos, obvious multicolored bangs can appear. Moreover, this mode, because of its characteristics that force the graphics processor to recalculate image colors in real time, is inherently slower than the Amiga's other graphics modes, so much so that it caused Jay Miner, the designer of the Blitter, to consider eliminating it from the final version of the chip.

HAM mode is also difficult to use in games and applications where the screen content needs to be changed. If you slide the screen to the left until a "basic" pixel comes out, subsequent pixels, dependent on this, take on wrong colors.

This side effect complicates the handling of horizontal scrolling. A similar thing happens if a "basic" pixel is inserted into a sequence of interdependent pixels; for this reason it is difficult to draw BOBs (Amiga sprites) with the Blitter without ruining the underlying image.
The gamble then was to produce a fixed-screen graphic adventure using the HAM 8.

I can say with certainty that the visual effect is well accomplished. Oneiric





OUR FINAL SCORE

» Gameplay 65%

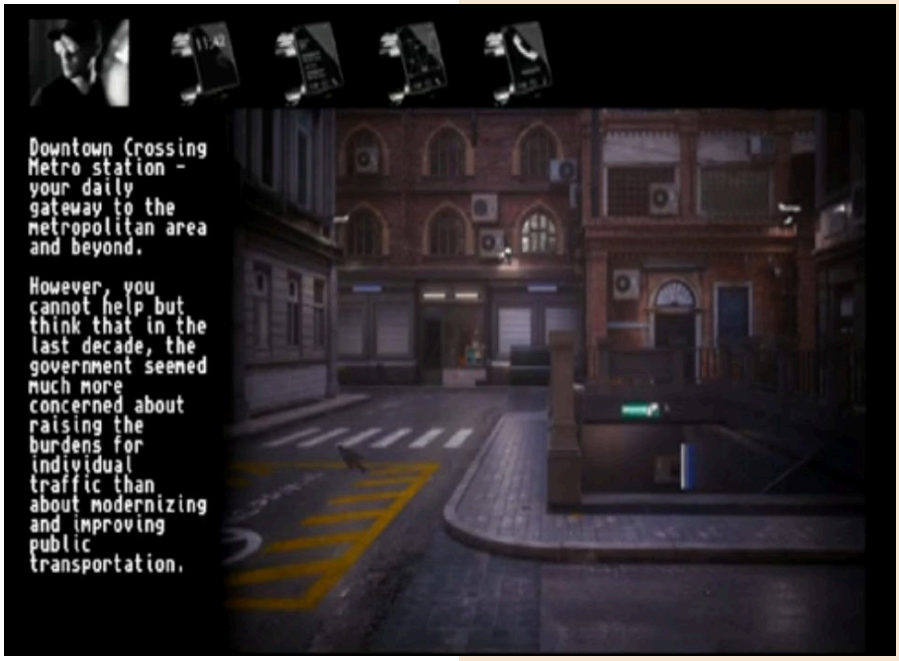
Remarkable graphic appearance in spite of little substance. There is good storytelling but also little to do on screen.

» Longevity 65%

It is not impossible to finish and there are 70 game scenarios.

and visionary thanks to this graphic approach and it goes well with the settings.

The game is classic point-and-click with on-screen instructions. By investigating the various game screens, it is possible to trace the tasks that need to be done to complete the adventure (which gets stranger and stranger as events unfold).
It is not an adventure that allows for "broad scope." You follow a narrative thread and go with that, and perhaps in today's times that may seem limiting and limiting.


Downtown Crossing Metro station - your daily gateway to the metropolitan area and beyond.
However, you cannot help but think that in the last decade, the government seemed much more concerned about raising the burdens for individual traffic than about modernizing and improving public transportation.

The narrative is enjoyable and intrigues fans of classics such as Neuromancer or Blade Runner.
All other players will have a hard time following events.

The game is optimized for widescreen display and requires a real or emulated Amiga with AGA chipset, 2 mb Ram chip, Amiga OS 3.X and 23 mb disk space.

It is Thursday, August 11th, 2039.
You are Sean, a 24 year old software integration freelancer currently living in Boston, Massachusetts, Federal States of America.

Personally, I enjoyed the graphics and the narration but I would only recommend it to fans.
It certainly looks like a series of titles that will take advantage of the HAM mode has started, and I look forward to seeing them.

by **Carlo Nithaiah Del Mar Pirazzini**

BATTLE ZEQUE DEN

Year: 1994

Editor/Developer: Asmik/Arys Software

Genre: Beat em up

Platform: Super Nintendo

The Super Famicom's Japanese library is a treasure trove of overlooked games. While everyone loves the many Square Enix role-playing games that never left Japan, there are countless gems such as Denjin Makai , King of Demons and Rendering Range r, games that I am sure would have found an audience if someone had the ability to localize them for the foreign market.

But then there are those who miss the mark. At first Battle Zeque Den looks like a winner. The production values are high and the mechanics are solid. But dig a little deeper and you'll find numerous flaws that mar the experience. This could have been a contender with a little more work.

The world is on the brink of disaster. A prophecy states that when heaven and earth fall, the world will end as humanity tears itself apart because of conflict. The first sign of this omen is the collapse of the spirits of light and darkness, which has occurred. But the same prophecy states that the earth will respond to the cry of heaven. Three martial artists with elemental powers embark on a journey to restore the balance and find the cause of the impending disaster.

Battle Zeque Den has three playable female characters; Rufu, Kairu and Hamusu. Each is aligned with a different element that informs their attacks, of which there is a fair variety. Each character has a different set of moves that makes their play a unique experience. Most of the special attacks are performed using simple button combinations.

There is a hint of role-playing as a system of leveling up in game as you gain experience depending on the number of enemies you defeat and the way you do it. This increases your maximum health and survival. It sounds complex but in practice it is standard.

The direct aspect of Battle Zeque Den that you will notice is its graphics. Battle Zeque Den is easily one of the best looking fighting games for the SNES.

Artistically it is gorgeous and well characterized. The rain effects and subtle changes in the time of day also help set the mood. The sprites are huge for the genre and also have good animation.

Large sprites come at a high cost. Some special moves cause the game to slow to a crawl and face only two enemies at once.

Battle Zeque Den takes place on a single plane. Although rare in the genre, it works. However, the large sprites make this a problem. You have little room to move, which doesn't feel good, especially since the game

OUR FINAL SCORE

» Gameplay 70%
Immediate in controls but definitely lacking in some level design choices.

» Longevity 55%
Tough and frustrating at times.

stops flowing with each encounter. They try to get around this problem by adding platforms and variable terrain. All characters can double jump, but these do not improve the game. As such, you only fight two enemies at the same time, which presents pacing problems.

Another sore point is the difficulty level. To compensate for the lack of so many on-screen enemies, each one is really leathery and difficult to deal with, plus it inflicts a ton of damage on you. Food that restores health is not common and restores so little most of the time it is an insult. You can adapt hit-and-run tactics to eliminate them, but considering how long the stages are it gets monotonous quickly. Oddly enough, the bosses are easy, especially if you save magic. Rufu's fire magic can almost kill some of them in one round. Despite Battle Zeque Den's flaws, I still enjoyed it. Battle Zeque Den is a forgotten gem suitable for "cobattle" gamers. It is an aesthetically beautiful but not well-calibrated title but worth rediscovering.

by **Roberto Del Mar Pirazzini**

NEW GAME

NOBELIA

Year: 2022
Editor/Developer: TWBurn
Genre: Puzzle/ARPG
Platform: Philips CDi
Website: https://twburn.itch.io/nobelia

Zelda meets Bomberman and does so on CDi.

The Philips CDi may not have received the love it deserved. It was one of many systems that attempted (failing) to ride the multimedia "boom" of the early 1990s. CDi did not work. Perhaps the unexceptional pad, perhaps some less-than-stellar and too few titles, and perhaps it also had the misfortune of being one of the few non-Nintendo machines to get uniquely ugly Zelda and Mario titles.

However, there is a small and loyal group of people who want to keep the memory of the gaming machine alive, and among those people is the developer of Nobelia, a title from 2022 that we are about to review.

This little homebrew features a rather large game world and 30 levels of play. Like Hudson's famous Bomberman, our protagonist also has access to upgrading her bomb, and as in any game of this genre she will have to face dangers and monsters of various kinds.

The story is about a portal that accidentally opened in the protagonist's backyard. The poor heroine falls into it and finds herself catapulted into a strange new land. To come to terms with it, he will have to explore this colorful world and search for all the useful tools to return home.

A lot of patience and skill is needed. While we have a setting à la The Legend of Zelda on one hand, on the other we are faced with game mechanics reminiscent of a classic puzzle game. Move the lever, mash the button, destroy the object to clear your way -- that and more.

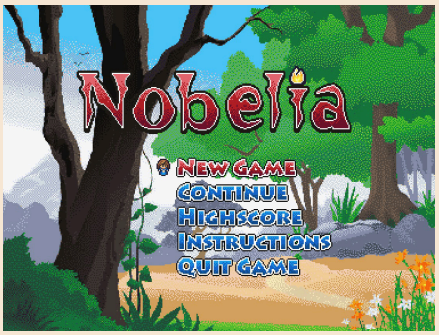
The style of play actually resembles Bomberman, of which it also shares the extreme danger of the bomb. In fact, if you misplace it you will be "roasted" by your weapon.

Getting out of the crazy world will require finding seven gold coins obviously scattered everywhere.

Several gameplay elements are available: we have the classic basic explosive bomb, a red-colored cloak that will save us from fire, a book called the Tome of Pyro that allows us to activate remote bombs, and of course the special magic bombs that allow us to open some places otherwise unbreakable by classic bombs.

The game is controlled quite well via the "dreaded" CDi pad. The directional cross moves the little heroine, key one places the bomb, opens the chest or activates a switch, key 2 activates the magic bombs while key 3 pauses the game.

Nobelia was released as a digital download for $16.50 and can be burned and played on real hardware



OUR FINAL SCORE

» Gameplay 85%
Fun and easy to learn. Well-developed puzzles and a good soundtrack.

» Longevity 80%
Not super long but enjoyable.

or in emulation on MAME or Retroarch. There is also a really nice and accurate physical version that you can find on this website: https://qrky.dev/nobelia/. I dwell on the latter because it is really well edited. Nice instruction booklet, CD packaging and illustrations.

In addition, the developer has released the source file on GitHub for anyone who wants to get their hands on it.

I personally enjoyed playing Nobelia. I relaxed. It sounds paradoxical, but the really well-done music and the game system that doesn't rush made me spend a few hours in total relaxation. The puzzles and monsters are not difficult, and in general the approach and difficulty curve is well calibrated.

The graphic aspect is nice. We don't have who knows what level of graphic technique, but in its own small way it is well done and very colorful.

If you have a Philips CDi, I recommend you buy it because it is a good breath of fresh air and a title you will enjoy playing.

The same applies to those who want to play it in emulation. I only recommend setting the BIOS files on Retroarch to the best of your ability to avoid runtime errors.

by **Carlo Nithaiah Del Mar Pirazzini**

NEW GAME

ZELDA'S ADVENTURES

Year: 2023
Editor/Developer: John Lay
Genre: ARPG
Platform: Game Boy
Website: https://john-lay.itch.io/zeldas-adventure

In the 1990s Nintendo agreed with Phillips to develop 3 Zelda titles for the CDI multimedia platform.
The first 2 were side-scrolling platformers of dubious quality, similar to Zelda II while the third, Zelda's Adventure, was a top-down adventure and action game.

It looked like an interesting title despite shaky technical development. Developer John Lay then decided in 2023 to make a "demake" for Game Boy.

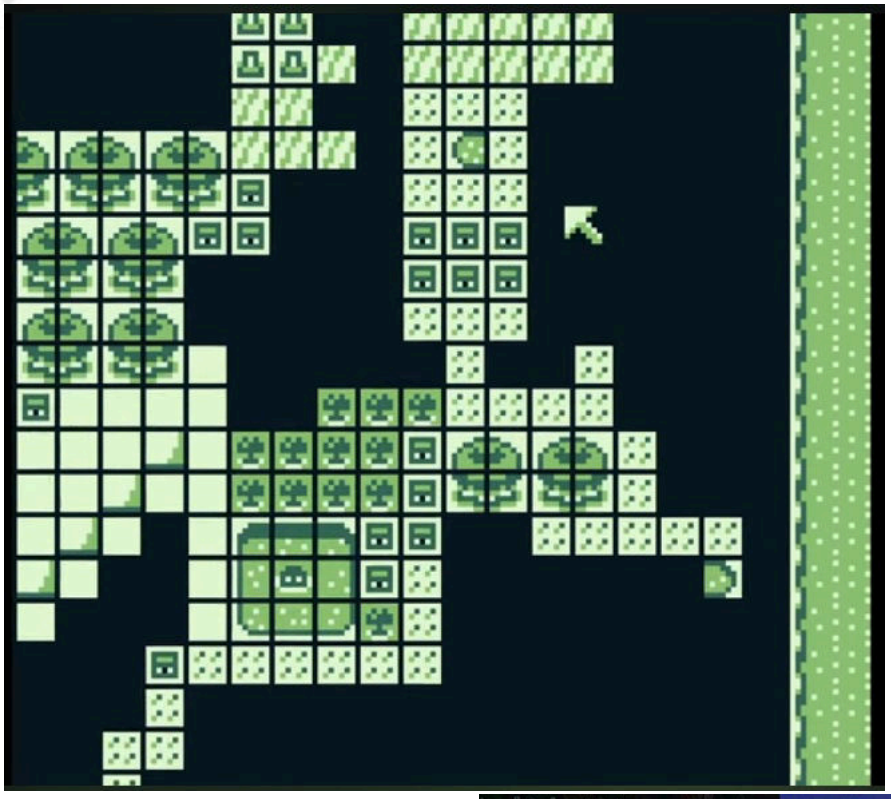
The game is developed with GB Studio and is a faithful transposition of the CDi title, with some gameplay changes. The story sees the evil Ganon capture the young hero Link. Princess Zelda is the only one who can save him.

Obviously rescuing young Link will not be easy indeed it will be a path full of challenges, monsters, mysteries and terrible traps.

If the CDi title was unquestionably a poorly made product with numerous problems (lots of technical problems), this incarnation of it on GB is well done. The graphic style is reminiscent of Link's Awakening. Beautiful to look at and enjoyable to play.

To all this we can add inspired music and good gameplay.

Some features of Oracle of Ages and Season (present in object management) have been included.
This version is definitely playable. There is care in the implementation, there is care in the development of



OUR FINAL SCORE

» Gameplay 90%
From a terrifying game can come a little gem of gameplay and design.

» Longevity 80%
Not a very long game, but very enjoyable.

the game and the interactions within it. It all runs smoothly. Puzzles, fighting and action. It really looks like a title born on "Game Boy."

There are still some minor bugs to be fixed regarding pixel collision, but it is all fixable with the next updates.

In a nutshell... it's a good game, it's polished and playable deserves to be downloaded and played on your Game Boy/Emulators.

by **Giampaolo Moraschi**

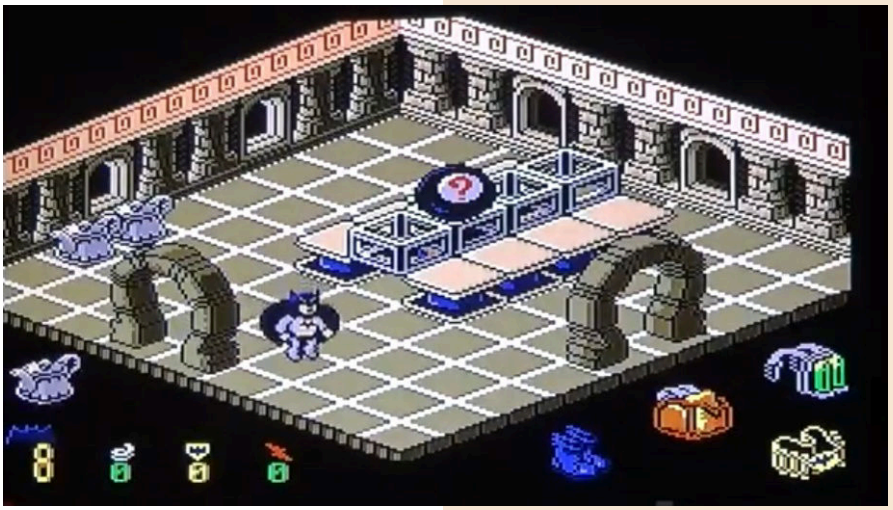
NEW GAME

BATMAN

Year: 2023
Editor/Developer: Ocean – Carlos Romero – Guantxip – AAMSX
Genre: Adventure
Platform: MSX2
Website: http://msxfx.blogspot.com/2023/07/liberacion-de-batman-y-hoh.html

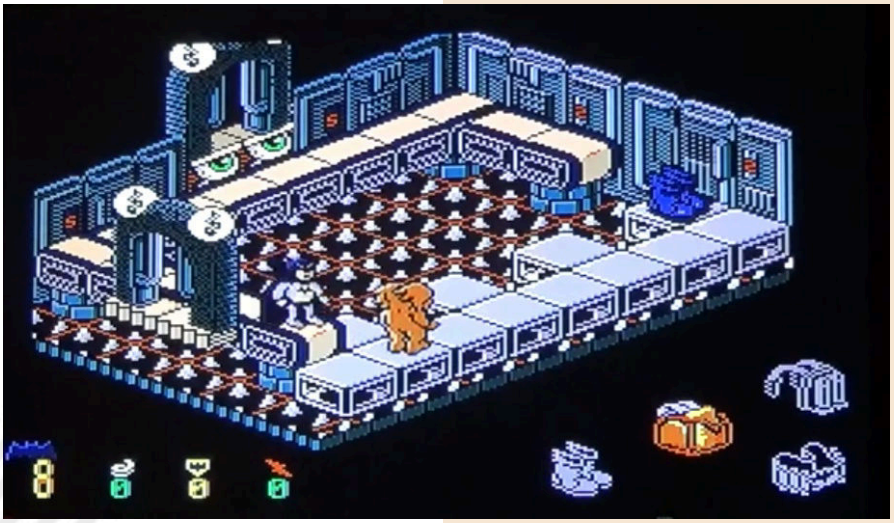
Batman on MSX was a beloved title. Released in 1986 on the MSX platform but also on the Amstrad CPC and ZX Spectrum, the title made by Ocean Software made its way into the hearts of fans.

The goal of the game was to save Robin by collecting the seven Batcraf parts scattered throughout the Batcave.
The gameplay takes place in an isometric 3d universe, divided into fixed-screen rooms, somewhat like in the later (and beautiful) Head over Heels.



A unique feature at the time was that the game allowed you to automatically restart from a midpoint (the save point thanks to the Batstone) even the moment you lost all your lives and restarted a new game. An innovative save system.

At the time, magazines praised every version. High marks for the ZX Spectrum version as well as for its sisters on MSX and Amstrad.



The MSX version, however, suffered from direct porting. So "ZX-like" graphics that turned noses up.
In 2015, AAMSX launched the "enhanced" version for MSX2 on the market in cartridge format (for a fee). In this 2023 he released the ROM version totally free of charge.
The announcement came at the RU conference in Barcelona.

Although so many years have passed since its physical launch, there is still a great demand for the title, and this launch is a great opportunity for all those who did not have the chance to purchase it in cartridge format.

The Rom version includes all the contents of the latest version of the game, except for the cartridge save system, which is obviously impossible in ROM format.

What's new in this "colorful" remake?

Numerous missing animations, a screen fade in presentation, changes in game speed, the addition of music and excellent sound effects, and support for joymega.

Batman always remains a great title to play with accurate and, often, deadly level design that will keep you busy for quite some time.

A title to have in the MSX2 toy library.

by **Giampaolo Moraschi**

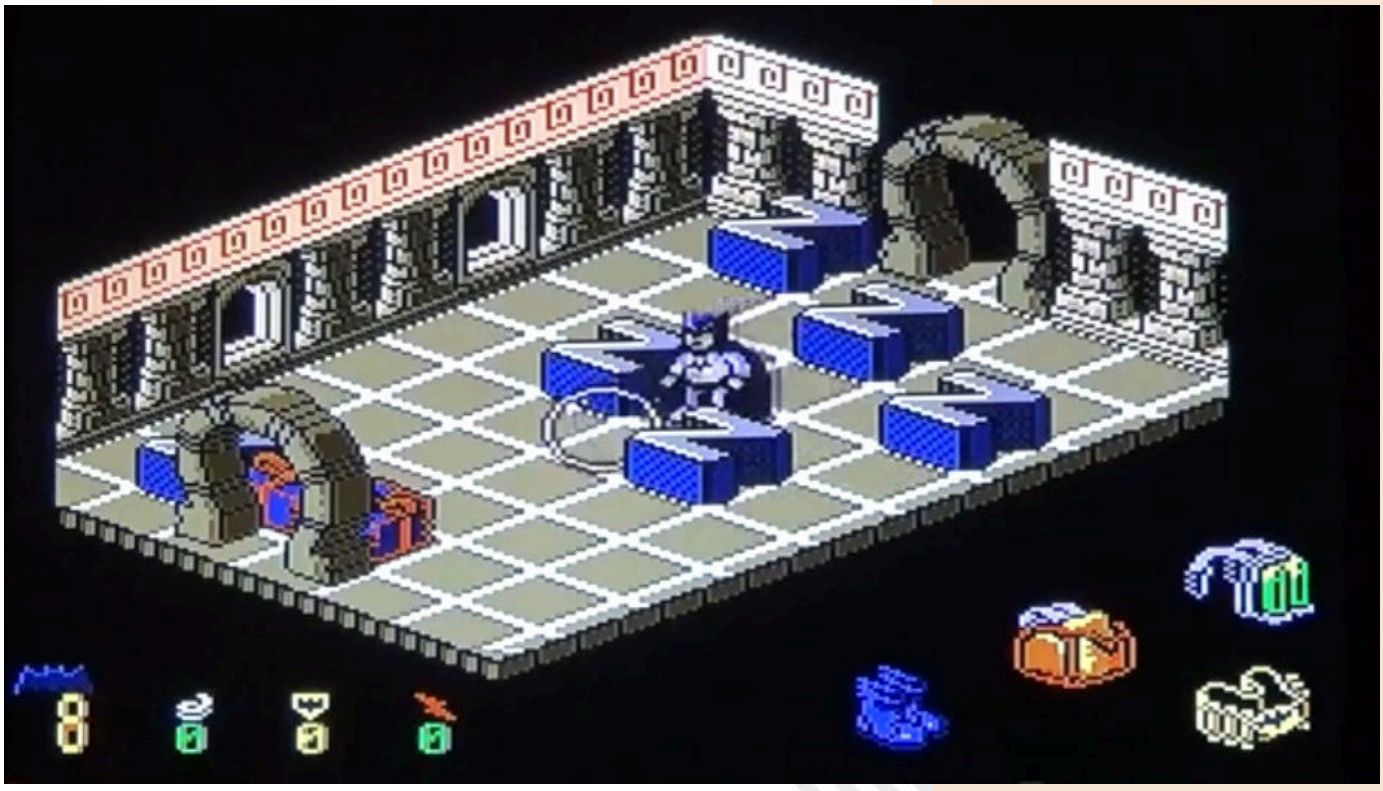
OUR FINAL SCORE

» Gameplay 87%

A well-structured title in a "modern" version excellently realized from a technical point of view.

» Longevity 90%

The game catches on immediately. The difficulty may discourage at first even the most "rough around the edges" players, but in the long run it fully satisfies the desire for adventure.



INTELLIVANIA

Year: 2021
Editor/Developer: Intellivision Revolution - Matthew Kiehl
Genre: Action/Platform
Platform: Intellivision
Website: intellivisioncollector.com/roms/intellivania-rom.html

The first time I saw an Intellivision in my life was in 1986, at a cousin's house. I had never heard of Mattel's console, and that experience was really remarkable, because the first game he put on was He-Man.

I was 7 years old, and seeing my favorite cartoon character in a video game caused me a lot of excitement. That moment is forever etched in my memory.

In 1989 I received my Nintendo NES, and since then I have moved on to the third generation.

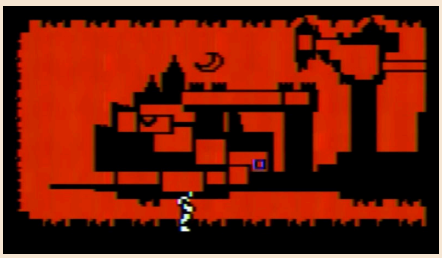
It was my second golden age with video games, and games like Double Dragon, Teenage Mutant Ninja Turtles 2 and Mike Tyson Punch Out impressed me with the quality.

But my greatest passion was Castlevania. Beautiful, scary (I was a kid) and terribly difficult.

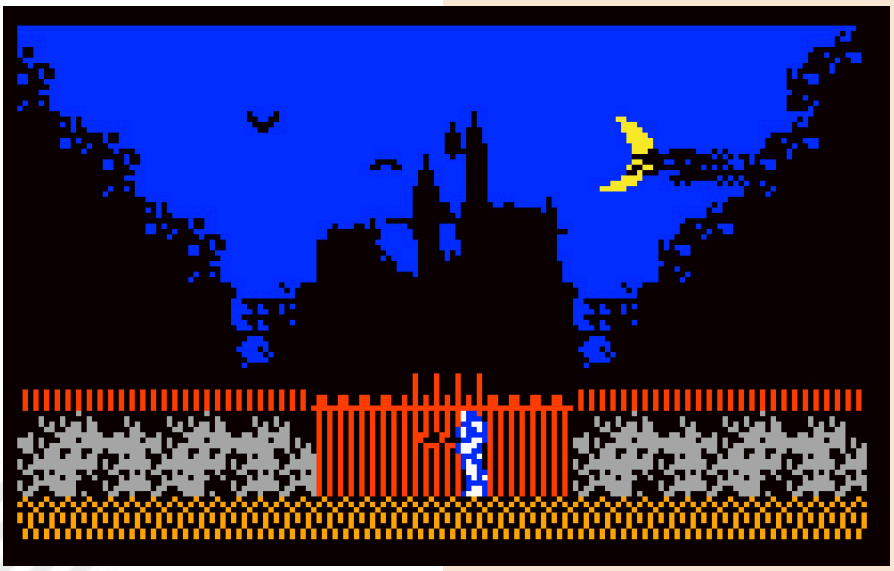
I lived intensely through the transition to the 4th generation and all the graphical revolution that the Mega Drive and SNES brought. For someone who grew up having to use their imagination to turn a pixel into a character, watching Streets of Rage on their home TV was pure magic.

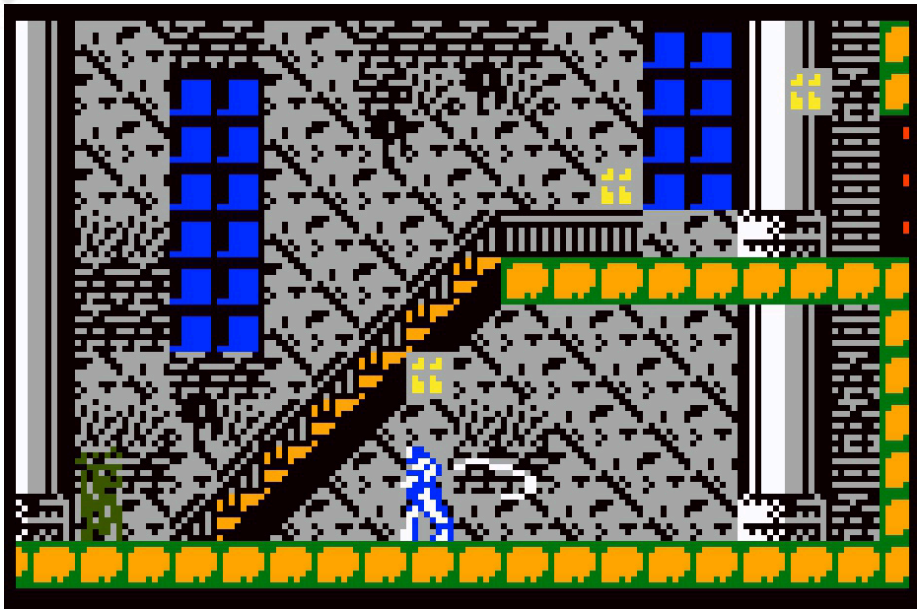
Many years have passed, I got married, I had children, and at some point I felt the need to dig into my past, a very happy time in my life, and I decided to enter the world of video games again. I went in search of those games and consoles that marked my childhood.

And then, finally, Intellivision came into my life! I don't even need to say what was the first game I bought, right? But it wasn't just He-Man. I started exploring this incredible world and games like Burger Time, Popeye, among others, showed me how powerful the Mattel console is. It was worth the wait!



Then in 2021 I find out that Castlevania has also been released on the Mattel console. Unbelievable!





OUR FINAL SCORE

» Gameplay 80%
If it were not for the hostile controller, the grade would definitely be higher.

» Longevity 85%
Castlevania is always a tough game for die-hard guys.

Intellivania is an independent production, developed by a guy named Matthew Kiehl and distributed by Intellivision Revolution, a group of people who have done a great job of preserving history and releasing new games for the beloved second-generation console.

The game is sold in two formats, the digital one that you can buy and download from the site, and the physical cartridge version.

Impeccable manual with colorful illustrations and lots of pictures.

And the gameplay is all there! Simon entering the castle, through well-crafted graphics and a great soundtrack, makes this title a Great Game.

All the stages of the original Nes version are present. The design is the same. Even the hidden objects are in the same places.

Impressive hit and collision detection and attention to detail in scenarios.

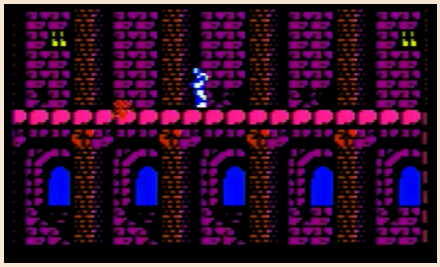
Unthinkable in a console born in the late 1970s.

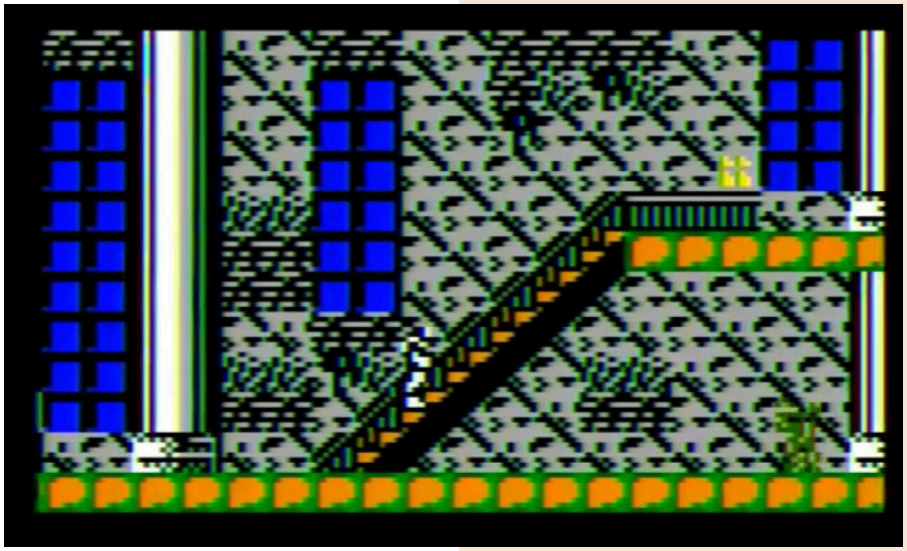
The only flaw is the controller. Not due to the gameplay, but due to the characteristics of the intellivision controller at certain times really uncomfortable.

The game is still him. Difficult and certainly rewarding when completed.

Perhaps the price of the cartridge is not the cheapest, but if you have the Mattel console at home it is a title to have.

by **Giampaolo Moraschi**





GG ALESTE 3

Year: 2020

Editor/Developer: M2

Genre: Shoot em up

Platform: Game Gear

GG Aleste 3 (subtitled Last Messiah) is a brand new shooter in the Aleste series developed in 2020 as a bonus for the Aleste Collection on Ps4 and Switch.

M2 brought back some key staff members from other shooters of the 1990s, including programmer Takashi Yamashita (Super Star Soldier, Nexzr) , graphics director Kazuyuki Nakashima (the original GG Aleste , Spriggan , Blazing Lazers) and graphic designer Shinsuke Yamakawa (Battle Garegga). Composer Manabu Namiki, an expert in retro-style soundtracks, not only provided the music but also acted as the game's director and game designer.

The story focuses on pilot Luna Waizen, who must fight against cyber terrorists who have hijacked Earth's satellites. The game functions much the same as the previous GG Aleste games from two decades earlier, offering one main weapon (enhanced by P chips) and one of six secondary weapons, each individually enhanced. The bombs of GG Aleste 2 are gone, replaced instead by a shield that will absorb a single shot and is activated when 20 P chips are collected. It is not exactly an exciting system but it is quite useful.

The most impressive aspect of GG Aleste 3 is that it is not only developed in the style of 8-bit Sega games, but is actually programmed for the Game Gear hardware specifications.

There are many impressive little touches and visual effects, such as the way birds fly under your ship at the beginning of the second stage, or the missile that rotates under you in the fifth stage. The boss fights are equally impressive: the second stage is a satellite colony (similar to the first GG Aleste), which is suddenly torn apart by a giant robot equipped with two huge blades. The third level's boss is a huge crab, which blows our bubbles that don't kill but temporarily slow movement, while the fourth level is a manta ray-shaped submarine that fires targeted missiles.

The final area has cruisers with elegant raven black coloring and bright ruby crystals: truly beautiful.

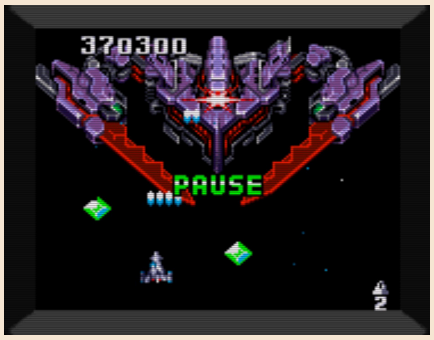
The game slows down quite a bit, but it seems designed to take that into account as it helps to weave in some projectile patterns.

The soundtrack is beautifully impactful and arranges the series theme beautifully.

The only potential problem with GG Aleste 3 is existential: why the Game Gear? The system has a fairly small resolution (160×144), which means that the playing field is more enlarged and slightly more square than what would be found on the Master System (256×192) or Genesis (320×224). As with previous GG Aleste games, the sprites are sized appropriately, so it never looks too cramped, but it is an odd choice, especially considering that the glory days of the Aleste series are generally considered the top in the 16-bit era. Perhaps M2 wanted something to use in Sega's Game Gear Micro console-all three Aleste GGs are included in the mini handheld-or perhaps Japan simply has more nostalgia for the Game Gear's graphical look than the SMS/Mark III.

Ultimately, GG Aleste 3 is still an outstanding 8-bit shooter that benefits from an experienced development team, both in terms of programming and design.

by **Carlo Nithaiah Del Mar Pirazzini**



OUR FINAL SCORE

» Gameplay 85%
Despite the micro-resolution, it is a well-developed and very enjoyable title thanks to a well-developed level design. Perfect controls.

» Longevity 80%
Not too many levels but challenging enough.

NEW GAME

REPUGNANT BOUNTY

Year: 2023
Editor/Developer: Starlab
Genre: Platform/Adventure
Platform: Game Boy Color
Website: https://skittlesfiddles.itch.io/repugnant-bounty

Rosemarie, an alien princess from the planet Nimola is searching for the culprits behind the death of her mother and the inhabitants of her planet.
In chasing them through sidereal space he falls on the planet Irulia, and here he will have to search for and eliminate the terrible alien creatures.
I often take my GBC to the university. I call it mine even though it is my father's. In between breaks from classes, I enjoy taking a look at some of the little games.
Thanks to Uncle Nith, I got this Repugnant Bounty, a platform and adventure game that particularly impressed me.
This is not the most graphically beautiful title nor the most amazing adventure of all time, but it grabbed me. It drew me in to the end.
Maybe it's the empathy with the little protagonist, maybe it's the distressing atmosphere that slowly kidnaps you, but Repugnant Bounty is a good game. It has a nice soundtrack and I must admit it engages you.
There are some unclear points in the game, and we will often find ourselves retracing the same point several times, but I did not find it annoying.
Recommended for those looking for something engaging and with a good story.
by **Ingrid Poggiali**

OUR FINAL SCORE

» Gameplay 85%
It is a Metroid clone and uses the same approach. Simple and very playable.

» Longevity 75%
It's not super long but it catches you and keeps you playing with it.

NEW GAME

DIG DUG REVIVAL

Year: 2023
Editor/Developer: Namco – LC-Games
Genre: Arcade
Platform: Commodore 64
Website: https://lowcarb.itch.io/dig-dug-revival

A sparkling new tribute version of Namco's celebrated classic.

Dig Dug is an arcade title developed and published by Namco in 1982 and later imported to the West by Atari.

The title was a stratospheric success and was converted on consoles and home computers of the time and later for more modern platforms.

The aim of the game is to dig burrows in the ground and defeat all opponents by either inflating them with a pump or by dropping rocks on them.

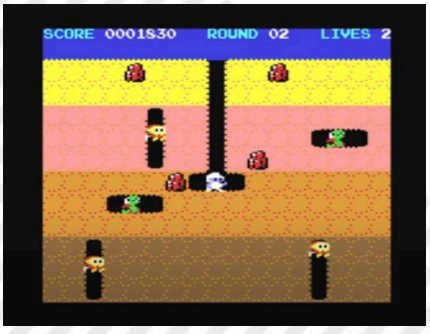
The game's wacky protagonist is named Taizo Hori (which comes from the word Hortai zo, meaning "I want to dig") and moves around a vast underground area with side-view.

Initially, the whole area is filled with dirt, except for a few burrows and a small strip at the top representing the surface area.

The player controls the funny little man equipped with an auger, able to move in all 4 directions and dig burrows in the earth.

You dig by moving the joystick as if you were "walking," gravity has no effect, and the little man can also move up or down.

There are several monsters to defeat, and the pace of play increases by increasing the challenge in each level.



The conversion for Commodore 64 came in 1983 thanks to Atarisoft.

This version is one that Commodore followers should be proud of. A little classic very similar to the arcade version with a cute musical tune and the addictive gameplay. A great title for the time that has also held up well over time, aging like a good bottle of red wine.

Until today! Until the arrival of this Dig Dug Revival, grand homage of the original title developed by LC-Games. The game is the same except for the random generation of levels. A choice that enlivens the already excellent gameplay in no small part.

To this we can add more detailed graphics.

Great work by the folks at LC-Games who have really pulled off another gem for C64 to add to the many presented since the beginning of the year.

A title you can find here: https://lowcarb.itch.io/dig-dug-revival-c64

by Roberto Del Mar Pirazzini

OUR FINAL SCORE

» Gameplay 95%
One of the most entertaining games of the golden age. Simple, straightforward, and fun.

» Longevity 90%
Increasing difficulty curve and a great desire to see how it ends.

NEW GAME

DUCK TALES

Year: 2023
Editor/Developer: Capcom – Infidelity
Genre: Platform
Platform: Super Nintendo
Website: https://t.co/4K8ogtdQBL

Duck Tales is beautiful! When I was little I used to play it on my father's Nintendo. I enjoyed reliving the adventures of Uncle Scrooge that I used to see on TV.
Anyone who has played Duck Tales on the NES says with certainty that it is one of the best platform games for this console.
Now I play it on Super Nintendo (my college buddy in the mini version) and I must admit that the same fun and joy is present.

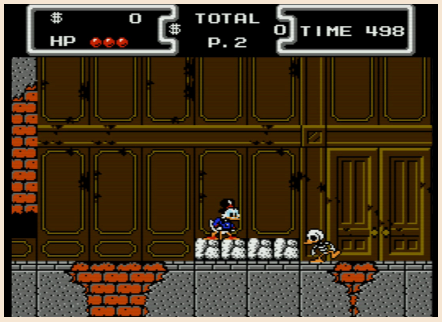
In the game we play Uncle Scrooge, who will have to traverse different areas of the planet in search of treasures.
At the beginning of the game, we will be given a choice of five different levels. One's choice can be made by selecting one of these levels from a mega-screen located in Uncle Scrooge's headquarters in Duckburg. Each level features Ket McQuack, which allows us to re-enter the city to collect loot during the operation.

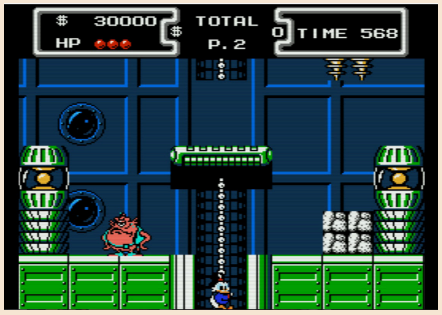
The title was great fun, and reading around the web a bit, I found out that it was one of the big hits of the late 1980s on consoles. It sold something like 3 million units between the Nes and Game Boy versions, becoming one of Capcom's best-selling titles.

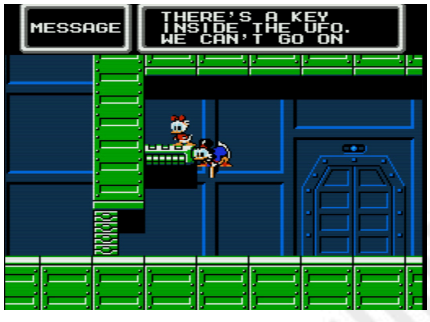
The game system and colorful graphics are also present in this "remastered" version for Super Nintendo, which also benefits from increased resolution and an adjustment in jumps and character movement.
The soundtrack has been updated and is still splendid. The original was considered among the best of the 8-bit era.

What more can be said about this version? The Super Nintendo Pad lends itself well and is very responsive, the game is extremely playable and never punishing, and you have as much fun as you did as a child.
I just have to recommend it to you, maybe during summer vacation (which I miss, going to college is completely different from when I was a young maiden in high school).

by **Ingrid Poggiali**







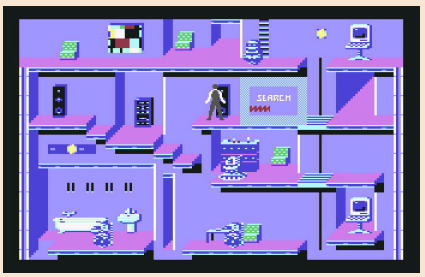
OUR FINAL SCORE

» Gameplay 95%
Beautiful as usual and then more colorful and responsive.

» Longevity 95%
It is a title that is fun to play and replay often.

IMPOSSIBLE MISSION II

Year: 1988
Editor: Epyx
Genre: Platform
Platform: Commodore 64



It has been a good five years since my debut on Retromagazine World and my first article covered the first chapter of a saga that consists of 2 chapters; although rumors say that a third is in development... Let's hope so! It would deserve it all!
Two lonely but substantial chapters, ultra challenging and perhaps impossible to finish for many, but not for all. Years later, here is Impossible Mission 2, a sequel to the award-winning first one and no less difficult. In the second chapter we are going to scour as many as eight towers whose owner is none other than the crazy, bald-headed scientist of the first chapter, namely Atombender whom apparently, our protagonist has pardoned.
He was also probably unaware of the existence of that complex comparable to Milan's City Life with respective thematic areas such as motors, fitness and much more to discover. In each one we will have to find the encrypted code in the form of a musical tune, being careful not to fish for duplicates, otherwise we will have to go to the next tower empty-handed convinced that we will be able to finish the game early. Oh yes, because if fate is on our side, we can find all six codes in a row ending the game a little earlier than expected and this is because, with each game, as in the first episode, the placement of objects, furniture etc. etc. changes.

At first it might be scary to have to avoid the dangerous robots (there are new ones in addition to those already encountered in the first chapter) and explore all those rooms, however, I can assure you that they are not at all scattershot; you will find difficulty only at the beginning or in a few rooms where the platforms and robots are arranged a bit too randomly.

The sound once again contains digitized speech and robot noise, so nothing new in this respect.... And maybe that's for the best. As for playability, I personally found the game a bit more manageable and linear than its predecessor. What might be confusing is the interface, which at first glance looks complex, but don't worry, no mosaics to match! Just a cassette in which we will hear recovered tunes and items to use to our advantage such as bombs and light bulbs to illuminate completely dark rooms (new addition, just like the horizontal elevators).

On the ending, however... I don't want to make spoilers in a review! But since it is not super easy to find the last secret room, I will tell you: as soon as you have all six tunes, go to the next tower (precisely the corridor that connects them) and enter the door with the skull... I have helped you enough! Prepare well for your return from vacation and, if you haven't played it yet, you will see that once you start you will not rest until you get to the very last room with three computers present and only one that will give you the ending. Instead, the other two will reduce the game by one hour from the actual eight we have to play, instead of the canonical ten minutes as is the case if we die...

by Daniele Brahimi

OUR FINAL SCORE

» Gameplay 80%
As in the first title, but it doesn't need millimeter accuracy.

» Longevity 90%
Eight towers sounds like a lot, but you will play it until you complete it.

Everything deserves to be preserved!

In today's fast-paced, interconnected world, with technology advancing by leaps and bounds, it is easy to forget the roots of our digital world. Yet to truly understand where we come from and appreciate the path we have traveled upon, we need to cast a glance back to the past.

As the world races toward an increasingly digital future, it is essential that we do not forget the foundation on which it was all built. The computers of the 70s and the 80s laid the foundation for the technological revolution we are experiencing today, and the software written then is a cultural treasure that cannot be forgotten.

This issue is a window into the fascinating world of those years, an era that shaped our modern digital age, but with a privileged view on the latest news: just take a look at the games that were released this year for these machines... Unbelievable!

A journey through these pages will take you back in time, reminding you of what early home computer screens, loudspeaker sounds and endless lines of source code written with love and passion were like.

But our purpose is not just nostalgia. It is a call for the preservation of this digital heritage. In today's world, where technological obsolescence is the order of the day, we must strive to preserve the software and listings of the past before they are lost forever. These ancient treasures teach us not only how computers worked back then, but also how much we can learn from the roots of our digital world. Mic the Biker Novarina's article "Are video games at risk of being lost?" makes it clear to us how many titles are really in danger of being lost forever and why our and your efforts are so important.

Join us on this journey through time and you will discover why preserving the software and listings for 8-bit machines is more important than ever. We want to be your guide in preserving a valuable digital heritage so that future generations can get to know and appreciate the beauty of the early computing as they prepare for the digital future waiting for them.

Pick up any copy of RetroMagazine World and immerse yourself in the nostalgia, education and passion that only the world of retrocomputing can offer. Don't let the past fade into oblivion; together, we can preserve digital history for generations to come.

Francesco Fiorentini

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